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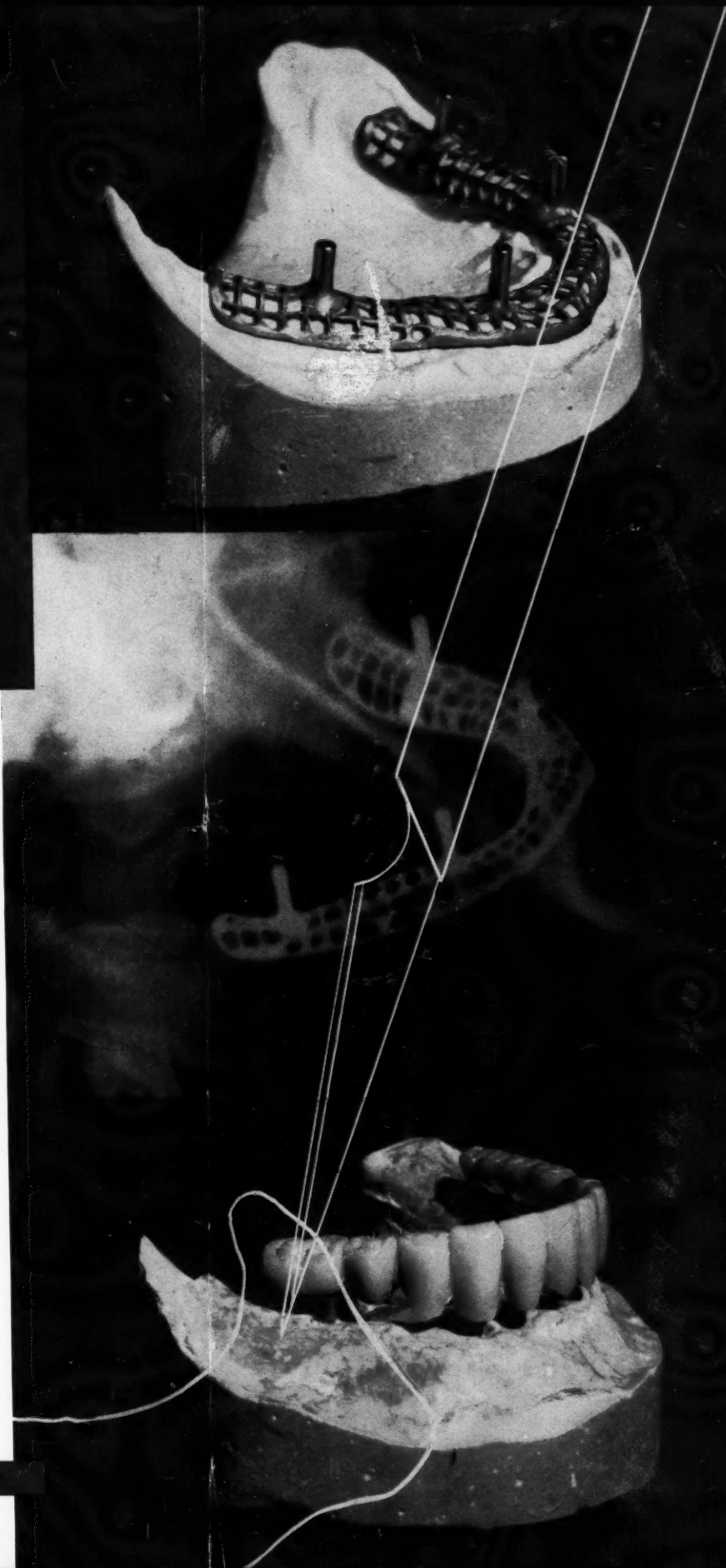
October 1951

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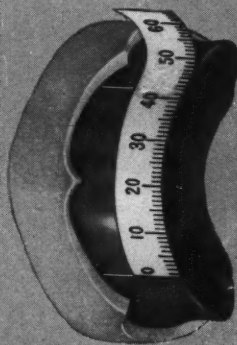
...suggested procedure for simplified tooth selection

1

On the wax bite rim, inscribe the position of the central axis of each cuspid.

One of the popular procedures followed for these guide lines is to place a straight edge at the alae of the nose and parallel to the central axis of the nose. This line continued to bite block will in 75% to 80% of general cases correspond to the central axes of cuspids.

A. The millimeter measurement taken between the inscribed lines will correspond invariably to the numeral identification of the proper Five-Phase Anterior mold.



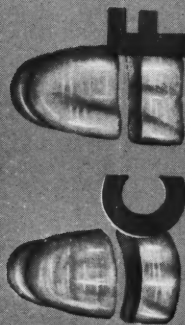
2

The length of the upper anteriors is the measure of distance between the edge of the wax bite rim and high lip line.

3

Dominant labial character (Curved or Flat) may be obtained from pre-odontulous records or if none exists, the dominant labial characteristics of near blood-relatives will serve as a guide.

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L	L36 C	L39 C		L42 C		L45 C		L48 C	L51 C
M	M36 C	M39 C	M40 C	M42 C	M43 C	M45 C	M46 C	M48 C	M51 C
S		S39 F	S40 F	S42 F	S43 F	S45 F	S46 F	S48 F	
WIDTH OF 6s SET-UP	40.0 MM	44.0 MM	44.3 MM	47.0 MM	48.0 MM	50.0 MM	51.0 MM	54.0 MM	59.0 MM

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OCTOBER 1951

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An IMPLANT TECHNIQUE

For Full Lower Denture

NICHOLAS BERMAN, D.D.S., M.D., Seattle

DIGEST

This report describes a two-phase surgical-prosthetic procedure in which a satisfactory lower denture was constructed after routine procedures had failed.

The technique consists of the coadaptation of a metal casting placed directly on the mandibular bone under the periosteal mucosa. Discussion is concerned primarily with the surgery required for the implant and with the construction and precise fitting of the casting to the bone. A step-by-step description is presented for the operative procedure involved in this technique.

Description

The metal casting, prepared on a master model which is an exact duplicate of the mandibular bone, has four processes which pierce the mucosa and serve as abutments for a full removable denture or fixed bridge (Fig. 1).

A Stable Base

The pressure effect from the denture will be transmitted to the mandibular bone without interfering with the mucosa, ensuring a constant base for the denture.

The base will also serve as a solution for a fixed lower bridge in patients who have upper teeth but have lost the lower ones. Because the construction is bone bearing, the angulation of the inclined planes of the selected teeth is not important.

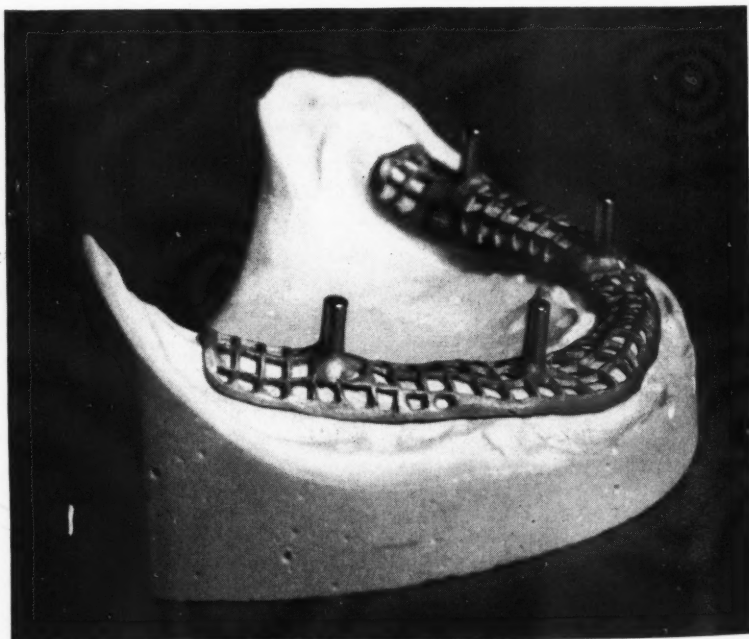
Material of the Appliance

It is extremely important to use a metal for the casting which (1) will not damage the surrounding living tissue, (2) will not dissolve in the body fluid, and (3) which is resistant to corrosion.

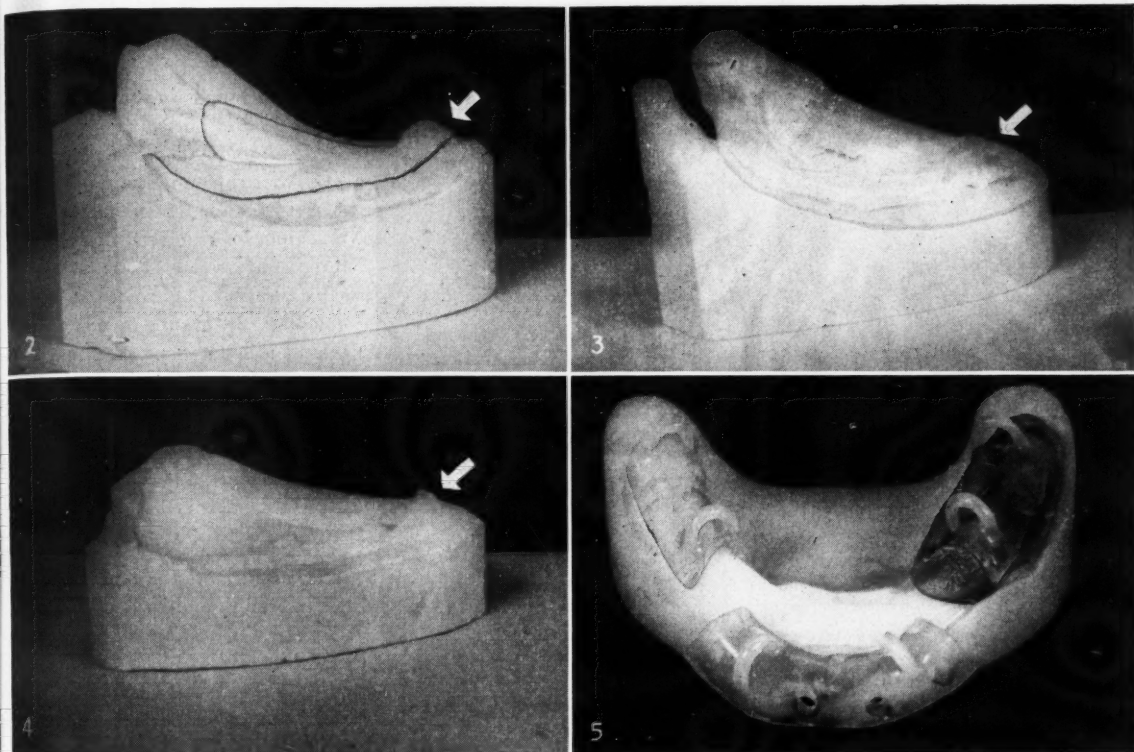
Research Pioneers—The bone surgeons were the pioneers in the search for a metal with the proper qualities because of the need for a metal

adaptable for internal fixation in traumatic surgery. A metal suitable for internal fixation of fracture extremities must (1) provide necessary strength, (2) must not generate electrolytic action, and (3) must be compatible with the surrounding tissue.

Extensive Experimentation—Holes were drilled into the bone of experimental animals and tiny pieces of various metals were placed in these holes; or screws of different metals were screwed directly into the animal bones. These metals were left in the



1. The metal implant on the model shows the accurate fit. Note the buccal and lingual extension of the implant which prevents any lateral movement. The fine meshwork of the implant makes it possible for the periosteum to grow through it and ensure stability. The four processes serve as abutments. The model was prepared after the impression was taken over the fully exposed mandibular bone.



2. Impression made over the mucosa before the exposure of the mandibular bone. Note the incisor area (arrow) where the soft tissue indicates a lingual inclination of the underlying bone.

3. Impression made over the exposed mandibular bone. Note that the incisor area (arrow) has a slight labial-buccal inclination with a moderate undercut. As shown in Figure 2, the impression suggested a lingual inclination; in reality it is a moderate labial-buccal inclination.

4. Undercut and rough areas removed, prepared to bear the implant. Final impression.

5. The perforated tray with hooks cut through in the cuspid areas shows the left section in place with the impression material in it. This is followed with the impression of the middle section and then the right third section.

bone for four to six weeks. The animals were then sacrificed in order to make a thorough examination of the metals as well as the surrounding tissue.

Early Experiments Disappointing—The results of the first experiments were disappointing for the following reasons:

1. It was demonstrated that the metals underwent corrosive destruction of the screw in many instances.
2. Chemical and pathologic examination of the surrounding body tissue revealed a deposition of the disintegrated metals with an inflammatory reaction. No matter what kind of metal was used inflammatory changes always occurred.
3. It was proved in many instances that the metal which was placed in

the femur bone had a direct toxic effect on the liver and kidneys. Aluminum, gold, and silver were the metals which the tissue tolerated best.

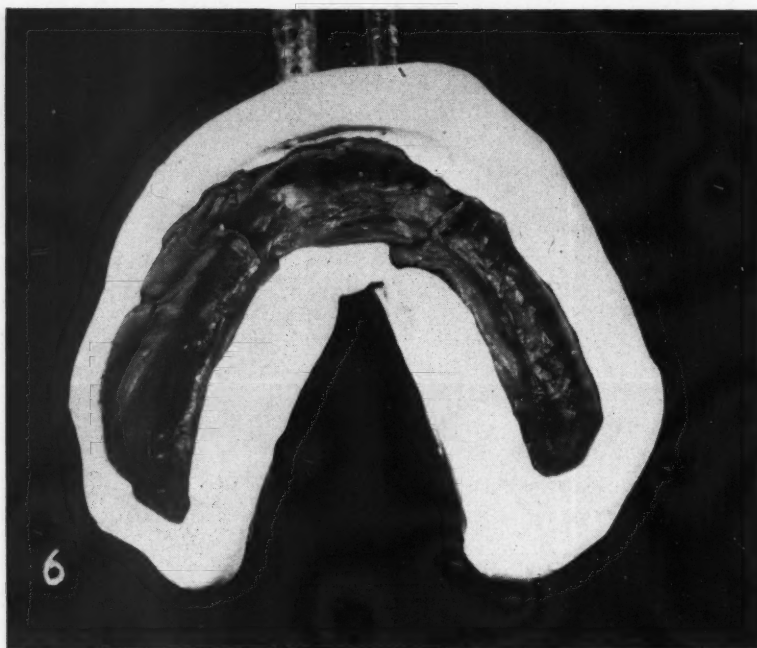
Stainless Steel—In 1920 a metal was produced which showed great resistance to the corrosive action of the body fluid. This quality seemed to make it suitable for internal fixation. Subsequent experiments showed, however, as Venable and Stuck¹ stated: "There is still some slight disintegration of the metal which can be demonstrated by analyzing tissues about it. But the corrosion of the metal is minimal and the interference with healing of the soft tissues is reduced to a very minimum."

¹Venable, C. S., and Stuck, W. G.: A General Consideration of Metals for Buried Appliances in Surgery, Surg. Gynec. & Obst. **76**:297 (April) 1943.

Introduction of an Inert Metal—The strength and tolerance of the alloy known as Vitallium® to body fluid was determined by the Fracture Committee of the American College of Surgeons which recommended the use of this metal because of (1) its high resistance to corrosion, and (2) its passivity in the body fluids.

The three other alloys recommended by the Fracture Committee are: 18-8 Stainless Steel, Tantalum, and 19-9 Stainless Steel.

Use of Alloy not Limited—It has been demonstrated that Vitallium does not undergo electrolytic action after coming in contact with body fluid over a period of six to eight weeks. The alloy has been used in the past ten years with excellent results and its use has not been limited



6. Shows the hydrocolloid impression being taken of the three sectional impressions.

to the making of screws and splints. Artificial joints and hip caps have been made and used successfully.

Appliances are Cast—It is extremely important to secure a casting free from flaws or air bubbles. Every appliance which is used for implants should be carefully examined by x-ray. A dendritic structure in the appliance can lead to breakage after a certain period of time.

Disadvantages Revealed in Other Techniques

Goldberg and Gershkoff,³ were the first to publish a report on the technique of the construction of full lower implant dentures.

A brief outline of the technique reported is the following:

- 1) An impression is taken from the mandible over the mucosa.
- 2) The thickness of the tissue overlying the mandibular bone is determined. This thickness is scraped off the model in order to secure a

master model whose contour should correspond to the mandibular bone.

3) Preparation of a casting fitting over the alveolar crest. This casting contains four abutments, a molar and a cuspid on each side.

Exfoliation Noted—The casting is inserted under the mucoperiosteum and fastened to the mandible by means of screws. The report states: "In a few cases the exfoliation of one or more screws has been noted. The maintenance of the screws for retentive purposes is not subject for concern."

Technique Inadequate—To construct and implant a casting by means of a screw which later exfoliates would seem an inadequate technique. For one thing there is the implicit danger of pathologic bone reaction.

Cause of Exfoliation—The exfoliation of the screw is the logical result of improper mechanical engineering of the cast from the start. To rely on an approximation in order to obtain a model which should follow the configuration of the mandibular bone would seem to be an improper method of beginning the technique. In an

edentulous mouth the alveolar crests, especially over the bicuspid and molar areas, are more square in aspect than round with slight undercuts lingually and buccally.

Mandibular Bone Seldom Round—Even though configuration of the mucosa is round, the mandibular bone is seldom so. Figures 2, 3, and 4 show three impressions taken from the same patient: (1) Figure 2, over the mucosa, (2) Figure 3, directly over the mandibular bone after it was totally exposed before removal of the undercuts. Figure 4 shows the undercuts removed, prepared to bear the implant.

A Difficult Process—To reproduce the mandibular crest with its indentations by means of scraping away a certain part of a model previously taken over the mucosa is almost impossible. The casting prepared on this model will rest only on projecting parts of the alveolar crest rather than on the whole mandibular bone after its insertion. The probably ill-fitting casting can only be held in place by screws. These screws are able to withstand stress which acts parallel to its long axis. That is, the screws are able to hold the casting in place only while the patient bites, as the casting is pressed directly toward the bone.

Lateral Movements Alter Stress—When the patient makes a lateral movement during mastication the situation immediately changes. The average masticatory force acts on the teeth at an angle of 45 degrees. This force acts on the screws as a torsion stress. The casting is held in place by four screws because of the lack of any retention adjustment and the screws are not able to withstand the torsion forces.

Lateral Pressure on the Bone—During mastication the force exerted amounts to as much as 80 pounds. The screws under this strong lateral torsion force exert a strong lateral pressure on the bone. Pressure atrophy of the bone around the screws is a pathologic result. After a short time the screws are in holes instead of in the bone and their exfoliation is the next step.

Solidity in the Bone a Requisite—Frantz and Meyer,² working with ani-

²Frantz, R., and Mayer, M.: Biological and Chemical Experimental Contributions Relative to Osteosynthesis by Cuneo's Method, Presse Med. 37:1616, 1929.

³Goldberg, N. I., and Gershkoff, A.: The Implant Lower Denture, DENTAL DIGEST, 55:490-494 (Nov.) 1949.

mals, proved that not only the composition of the alloy but its solidity in the bone is a prerequisite in order to be tolerated by the tissue. The mobile screw in the bone acts as a foreign body and will be treated as such by the defense reaction of the organism.

Successful Use of Screws—Screws are used routinely and successfully by bone surgeons in internal fixation without exfoliation. However, the function of the screw is to hold the fractured segments in the desired position until a firm strong union develops between the fractured segments. No force is exerted on this screw during the healing process because the fractured segments are in total rest by means of an external cast as applied in dentistry in intermaxillary wiring and head and chin caps when internal fixation is used in jaw fractures.

Implant is Stabilized—Fibroid tissue grows between the meshwork of the implant casting and by the effort of the periosteum to unite firmly to the bone again makes the implant stable. However, it is hard to believe that an implant which is resting just over the projecting part of the alveolar crest would be able to resist the lateral torsion effect during mastication.

Exact Reproduction of Bone—Keeping in mind the disadvantages described in planning an implant cast and construction of a model where the impression has been taken over the gingiva, it seemed necessary to have a model which was the *exact reproduction of the bone on which the implant should rest*. This model made it possible to construct a casting which fits exactly over the alveolar crest and *extends buccally and lingually, firmly adapted to the bone*. This buccal and lingual extension around the whole mandibular bone is the insurance that the implanted casting will remain firmly in place even against the strongest lateral movement during mastication.

Impression Taken From Mandibular Bone—Even the patient with an entirely flat alveolar process can have this saddle-like implant casting constructed because it is almost always

possible to find a place for the lingual and labial extensions, provided that the master model represents the exact duplicate of the jaw bone. This can be affected by taking an impression directly from the mandibular bone after it has been totally exposed.

Operative Technique

1. An impression is made over the gingival tissue in order to prepare an individual acrylic tray which approximately follows the mandibular contours. The tray is perforated to ensure better retention of the impression material in the tray. The lingual and buccal flank of the tray does not have to exceed a length of one-half inch.

2. Two trays are prepared. One is supplied with hooks on top. Not having experimented in taking impressions directly over an entirely exposed jaw it was doubtful that it was possible to put the whole impression tray precisely over the jaw without interfering with the lingually and buccally detached mucoperiosteal flap.

3. The tray supplied with the hooks is cut through the cuspid areas (Fig.

5) and the three sections with the impression material in it are put on the jaw one after the other and a DP impression taken over the segments (Fig. 6).

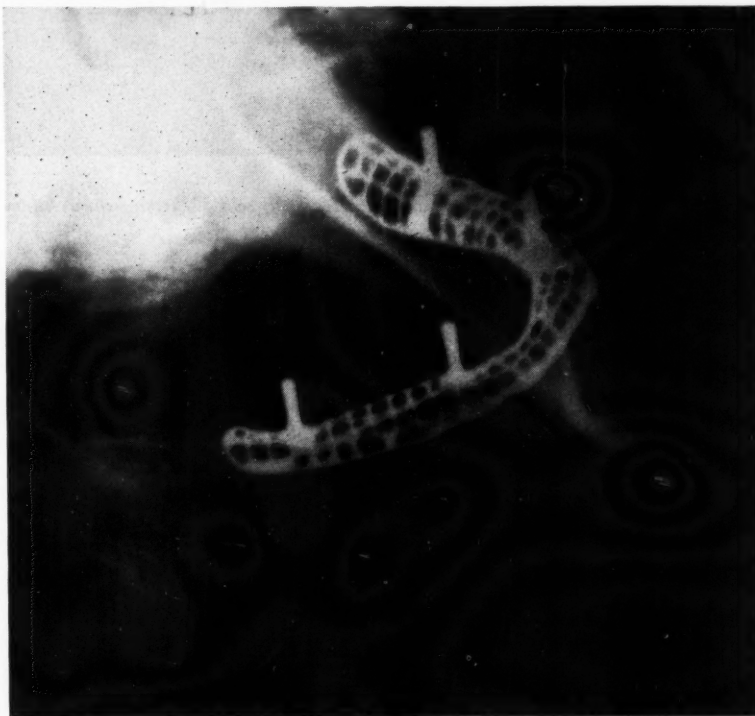
4. The hooks on the segmented acrylic tray ensure holding the segments in a fixed position in the DP impression. However, as shown in later experiments, the impression taken with one whole acrylic tray offered no difficulty.

5. The trays are soaked previously in an antiseptic solution (Dakin's) for twenty-four hours because heat sterilization is impossible.

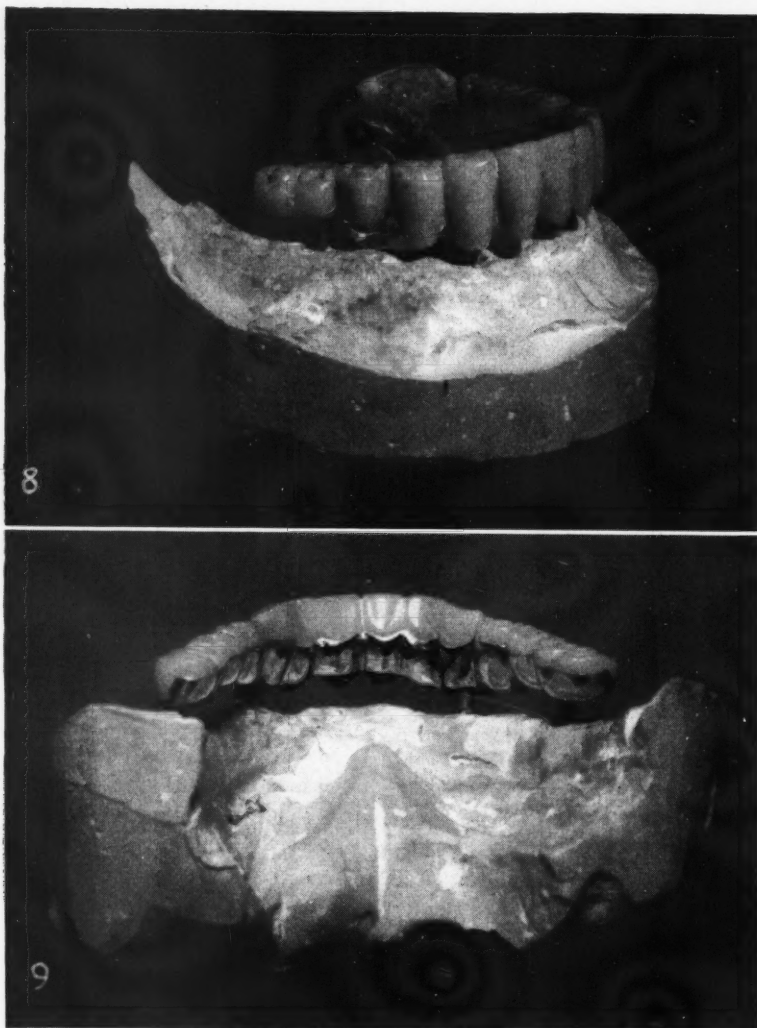
Preparation of the Patient

1. The patient's strength and resistance are not especially involved during the surgery or afterwards. The discomfort experienced by the patient does not exceed that which is encountered in the removal of an impacted tooth.

2. Bleeding and clotting time have to be checked because of the long incision and the bleeding which sometimes follows the separation of the periosteum from the bone lingually.



7. X-ray four weeks after insertion with the implant in place. Neither screws nor wiring is used. Note the exact fit of implant to the bone; also, the resemblance in fit of the casting to the model, in Figure 1.



8. and 9. Antero-posterior view of the method by which the prosthesis slides onto the four posts.

3. An antibiotic is given to the patient, starting with 400,000 units of fortified duracillin three days before surgery and 300,000 units one day before.

4. The use of a general anesthetic is not advisable because of the necessity of using a mouth prop which would interfere with the impression tray.

5. Much stress is placed on the use of atropine to reduce salivation and gagging to the minimum. Atropine, 1/150 to 1/75 grain, combined with a sedative (phenobarbital or nembutal®) is administered to the patient two hours before surgery.

6. Mandibular injections are made on both sides combined with local infiltration along the alveolar crest for better hemostasis. The mouth is packed with gauze.

Surgery

1. The incision over the whole alveolar crest is carefully completed, trying not to make any unnecessary side cuts.

2. Stretching the mucosa firmly over the alveolar crest by holding it lingually and buccally between the fingers of the other hand, a clear cut is possible without any difficulty.

3. The detachment of the periosteal

mucosa flap must be done carefully to avoid tearing. Sometimes it is necessary to make a small vertical incision buccally over the cuspid areas in order to reflect the mucoperiosteum without tearing.

4. Cautious handling of the soft tissue, as in every kind of surgery, is reflected in the postoperative recovery. Delayed healing and bleeding and sloughing off of the tissue are among the many undesirable consequences of careless tissue handling.

5. Undercuts and pointed parts of the alveolar crest are removed with bone files and fine rongeurs.

6. Excessive bleeding, if it occurs, can be stopped by (1) pressure, (2) adrenalin-soaked gauze, or (3) by bone wax. The debris is washed away with saline solution heated to body temperature. The mandibular bone is then ready for taking the impression.

Impression Material

1. Compound material and hydrocolloid paste were used as impression material. Both had been in boiling water for ten minutes before chilling to 110 degrees Fahrenheit. The handling of the compound material would seem easier and safer than the hydrocolloid because its rate of cooling is quicker and it does not chip away as the hydrocolloid does.

2. In a mandible whose alveolar process has a slight lingual inclination in a certain area or around the whole side, the undercut can be left and utilized for natural retention following the example of a clasp on a partial denture. In such a case hydrocolloid was used to secure a perfect reproduction of the bone. A whole tray should be used when the hydrocolloid is employed. Because of the lack of adaptation between the hydrocolloid and the bony structure it is difficult to hold a segmented tray in place. Taking the impression with one tray offers no complications.

3. After the impression has been taken the wound is washed with saline solution and dusted with an antibiotic powder. The wound lips are approximated and sutured with interrupted stitches, starting over the cuspid areas and proceeding to the second molar. Each subsequent suture is

placed half way between any two sutures already placed. It was found helpful not to approximate the wound lips closely together at this time; but rather to leave a small cleft between them and permit granulation in the space. In this way a loose mucosa is obtained over the bone which makes it possible to approximate the wound lips tightly after the second operation when the casting is placed under the mucoperiosteum.

Postoperative Management

1. With proper postoperative care the patient does not suffer any special discomfort. In general, the routine care applied in any type of oral surgery is sufficient. The necessity for absolute rest of the muscles attached to the jaws for the first forty-eight hours is emphasized in order to prevent tearing the sutured mucosa.

2. To prevent excessive swelling an ice collar is placed externally over the whole mandible immediately after surgery is completed. It should be held in place for half-hour intervals for a period of six to ten hours.

3. The patient is given a liquid diet for the first forty-eight hours. The sutures are removed in six to seven days. The use of (1) an analgesic (codeine), (2) a disinfectant in the form of a mouth rinse, and (3) antibiotic parenterally and in the

form of troches are routine measures.

Insertion Technique—The Vitalium cast frame will be inserted two or three weeks following the patient's full recovery. The incision of the mucosa and the preoperative routine are those previously described. The detachment of the lingual and buccal mucoperiosteal flap is not difficult because the two to three weeks that have elapsed are not sufficient for a firm union between the flap and the bone. The installation of the casting is a simple technique (Fig. 6).

Careful Suturing Required—The casting occupies a small area between the mucosa and the bone; therefore, the mucoperiosteal flap must be sufficiently loose in order to prevent a pulling effect of the flap on the sutures. The coaptation and suturing of the soft tissue around the abutment part of the casting requires special attention. These are the only places where separation of the edges and eventual sloughing could occur.

Effects of Postoperative Exercise—When seen on the third postoperative day a patient who failed to follow postoperative instructions had a cleft approximately 3 millimeters wide just below one of the abutment parts of the casting. The meshwork of the casting was entirely exposed through this cleft. The intention was to close this cleft later, after healing was com-

plete. This was not necessary, however, because spontaneous granulation occurred and the entire area was covered by granulation tissue within five weeks. Tincture of benzoin was used to hasten epithelization. The free surface of the steadily contaminated metal casting did not seem to act as a source for any inflammation.

Alloy Casting Firmly Adapted—Two months later the casting had become so firmly adapted to the bone that it was impossible to make the slightest upward movement, not even by using pliers over the abutment. The prevention of lateral movement had been ensured from the time of the insertion of the buccal and lingual extension of the casting (Fig. 7).

Conclusion

The technique described is a step toward the solution of some of the difficulties which prosthodontists often encounter. Many questions concerning the technique are still unanswered. The results of the technique must be examined after a long period of time when the implantation has been used for many years to determine the final merits of the technique. Bone change under constant direct pressure of the implant casting, if it occurred, would then be revealed.

408 Cobb Building.

Focal Infection

CHARLES H. SLOCUMB, M.D., MELVIN W. BINGER, M.D., ARLIE R. BARNES, M.D., and HENRY L. WILLIAMS, M.D., Rochester, Minn.

FOR A LONG time it had been recognized that acute inflammatory disease in a certain region of the body could produce secondary inflammation in some other region. Nevertheless, it was not until after the work of Billings and his co-workers that the conception that chronic, often symptomless, infections of low grade, localized in various parts of the body, could produce disease elsewhere in the body, began to receive general recognition from members of the medical and dental profession in this country.

Rosenow¹ stated "The scope of this influence may be judged by the

voluminous literature on focal infection that has appeared since the publications of Billings throughout the whole civilized world, and in which striking benefit to patients suffering from various diseases and also failure of others to improve have been reported." Although earlier diligence was directed largely to the reporting of the "striking benefits" there has lately appeared a tendency to focus the regard on the "failure of others to improve." This tendency seems to have reached a culmination recently.

Although it is admittedly difficult clinically to distinguish sharply the stage in which chronicity begins,

there seems to be a tendency on the part of physicians to admit the validity of the conception of acute foci of infection without demur. There also seems to be great reluctance on the part of some investigators to admit that toxins or bacteria from a site of long-standing infection can enter the circulatory system to set up secondary disease in other regions. The explanation for this suggested difference in bodily reaction does not seem to have been satisfactorily explained by the opponents of the theory of "focal infection."

There are probably few physicians who have not observed a sudden and

(Continued on page 480)

¹Rosenow, E. C.: Focal Infection and Elective Localization, Internat. Clin. 2:29-64 (June) 1930.

Techniques for RELAXATION THERAPY

and HYPNASTHESIA

DAVID WALDMAN, B.S., D.D.S., Flushing, N. Y.
and THEODORE H. WEISMAN, B.A., D.D.S., Brooklyn, N. Y.

DIGEST

The patient described in this article, formerly extremely apprehensive and difficult, is now completely relaxed, with the use of hypnasthesia, during dental treatment. Because of increased awareness of the benefits of psychosomatic sleep or relaxation therapy, with or without hypnasthesia, more and more dental patients are relaxed during the dental experience. Many of them have expressed pleasure at the

procedure and most of those treated by the authors of this article have been conditioned to enter into a light hypnoidal state or a medium trance quickly, with hypnasthenia beginning immediately.

It is the purpose of this article to review some of the methods of induction of relaxed sleep and to stimulate a desire on the part of dentists to inquire more deeply into this valuable adjunct to dentistry.

Degrees of Suggestibility

In normal (nighttime) sleep suggestibility is extremely slight or completely absent. Frequently, suggestions to the sleeping subject will awaken the sleeper, except in the case of children. In a hypnotic (psychosomatic) sleep the subject becomes hypersuggestible, rarely awakening. This tendency enables the experienced operator to induce hypnasthesia of any of the body surfaces or organs. Although 90-95 per cent of people can be hypnotized, the majority will enter the first state (relaxation-hypnoidal). On an average, approximately 50 per cent can achieve hypnasthesia deep enough for dental purposes.

Causes of Failure

(1) Patient awareness of affectation, (2) lack of assurance of the hypnotist, (3) faulty technique of in-

duction, (4) faulty estimate of the patient's suggestibility, and (5) conscious or subconscious antagonism of the patient will usually lead to failure. The more realistic the operator's attitude, with a broad experience in theory and practice as a background, the more frequently will the operator be rewarded with success.

Induction Techniques

There are many variations of induction methods. However, the basic principles are the same. They include (1) the fixation of the patient's attention by an object (the operator's eyes, relaxation, or sleep suggestion, written or verbal); or (2) the use of a harmless placebo.

Metronome Method of Induction—

1. The patient is told to give his undivided attention to a light that flashes on and off in synchronization with the beat of the metronome.

2. When eye fatigue begins to set in the patient is told, "Your eyes are getting heavy, heavy, heavy. Your eyes are getting heavier, heavier. They are getting so heavy that they seem to have lead weights attached to them. They are getting so heavy that they are beginning to close."

3. If the patient's eyes do not close tell him to close them slowly. Once they are closed do not stop: "The harder you try to open them now the harder it will be for you to open them. Stop trying! You will not be able to open them until I tell you. This is only temporary."

Counting Method—1. The subject, while seated, is told to look at any object of fixation. The operator then begins, "I am going to count and I want you to pay strict attention. When I say 'ONE,' close your eyes. When I say 'TWO,' open your eyes. As I count you will find your eyes getting heavier and heavier and all you will think of is sleep and relaxation." Continue to count.

2. When the patient can no longer open his eyes, suggestions of deepening the trance are made. "With each beat of the metronome, you will go deeper and deeper asleep. Each time I pass my hand over your forehead you will go into a deeper sleep, into a deeper state of relaxation than now."

3. There are many tests and methods of deepening the trance so that hypnasthesia or more relaxation can be achieved. A low, monotonous voice with suggestions of sleep, or creating pleasant dreams to occupy the patient while in the trance may help the dentist to achieve the desired result.



1. Induction of hypnasthesia in palpated area while patient is under influence of the operator.

2. Hand and arm levitation used for deepening trance.

3. Patient has hypnasthesia of required area and treatment is started. Metronome used for induction may be seen in the background.

4. Patient completely relaxed in a medium trance with metronome in foreground used to deepen hypnasthesia.

5. At future visits, because of post-hypnotic suggestion, the patient relaxes more quickly and easily. Metronome is seen in background.

6. Dental treatments completed, the patient smiles after a pleasant experience.

Dismissal Technique

Before dismissing the patient it is advisable to repeat the following sev-

eral times: "I am now going to awaken you. I am going to count to the number TEN. When I reach the number TEN and not before you will be able to open your eyes. When you awaken you will feel fine, normal in all respects. The anesthetic effect will be completely gone. You will feel that this was a wonderful, pleasant experience. No one will be able to put you into this state but a dentist,

a physician, or someone who will do so for purposes of treatment. No hypnotist will be able to put you into this state for entertainment purposes. The next time you come here, when you put your head back and I count to five you will go to sleep, into an even deeper state of relaxation than now. You will come out smiling and feeling fine." Then start counting.

Disadvantages of the Technique

In common with other adjuncts to therapy, relaxation therapy, with or without hypnasthesia, has advantages and disadvantages. The following are some of the disadvantages:

1. The first visit is usually time consuming.
2. It may take several visits to condition a patient.
3. Some patients can never be conditioned sufficiently to warrant the procedure.
4. Some patients may come out of the trance by the Trigger Mechanism. A word or sound to which the patient's subconscious mind is antagonistic may cause the loss of rapport.
5. Children below the age of six are usually not good subjects.
6. Some patients are antagonistic to the use of hypnosis, for themselves or others.
7. Hypnosis cannot be used with subnormal subjects, mentally defective patients, or neuropsychotic persons.
8. Mastering the techniques of induction and maintenance requires study and practice in order to become proficient in the use of hypnosis.

Characteristics of Natural Sleeps vs. Suggestive Sleep

In order to understand some of the fundamentals of hypnasthesia it is desirable to be aware of the characteristics of normal (nighttime) sleep as compared with suggestive (psychosomatic) sleep. Some of the differences and similarities are the following:

Normal Sleep

1. Organs of sense usually affected more easily.
2. Rarely occurs in a standing person.
3. Induced by fatigue cycles or habit.
4. Lasts, as a rule, the same period of time for a person.
5. Can be interrupted by loud noises, disturbances, or anyone desirous of awakening the subject.
6. Usually does not hear or respond to suggestion.
7. There is no contact with reality.

Suggestive Sleep

1. Absence of sensation except as willed by the operator.
2. Can be induced while subject is standing, sitting, or reclining.
3. Can be induced by the operator at will.
4. Time of duration depends upon control of operator.
5. Cannot be terminated by anyone except operator.
6. Hears the voice of the operator and responds to suggestion not only during but also after termination of trance state. (Post-therapeutic suggestion)
7. Subject has contact with reality through rapport with the operator.

9. It is always advisable to have a third person in the room if the patient is a female because of the possibility of sexual hallucinations.

Advantages

1. Ease of administration after the patient is conditioned.
2. Freedom from fear of dental procedures.
3. Usefulness in the elimination of habits, for example, bruxism, nail biting, thumb sucking and gagging.
4. Elimination of dallying (mouth rinsing, talking).

5. Decrease in salivation.
6. No possibility of soreness of the tissues or the unpleasant numbness of local anesthesia.
7. No possibility of nausea, headache, or vomiting which may occur after the administration of a general anesthetic.
8. Smaller doses of local or general anesthetics are required to allay pain.
9. More relaxed state or pleasant dreams.

176-17-69th Avenue.

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Toward MEASUREMENT of the FACE

in Space and Time

RICHARD M. SNODGRASSE, Ph.B., A.M., Ph.D., Philadelphia

DIGEST

Facial measurements to determine either status (size and proportion at same moment in time) or growth pattern (extent and direction of growth between observations) requires the use of a standardized technique of measurement. Adherence to a particular technique is essential if the subject, child or adult, is to be compared to norms for sex, age, race, and dental eruptive stage. Likewise, rigorous comparison of the dimensions of two or more series of subjects, measured by the same or different observers, depends on the same technique having been used for all. With these aims in view, definitions of a specific series of ecto-oral measures are presented and, as cephalofacial growth and wel-

fare and that of the entire organism are reciprocal, a series of body measurements is defined.

The definitions of ecto-oral measurements are those currently used in the study of the cephalofacial growth of Philadelphia children.¹ Many of these measurements belong to the standard anthropometric series defined by Martin,² while those specifically concerned with facial depths have been elaborated by Hellman.³ The instruments used in taking the measurements are designated as follows: SC (sliding caliper); HC (Hinged caliper); HS (Head spanner). A brief description of these instruments, as well as of the anthropometer (A) and its modification, the beam caliper (BC), is included.

Definition of Measuring Points and Measurements

Facial Heights, Figure 1A—Measured in the midsagittal plane of the face (SC). The midsagittal plane (MSP) is that plane which divides the isolated skull as well as the head and body into a right and left half. With respect to the head, (1) the midpoint of the nasofrontal suture; (2) the corresponding point at the base of the nasal septum where it joins the philtrum, i.e., the vertical sulcus in the upper lip; (3) the midpoint on the lower margin of the

mandible; and (4) the middle of the upwardly concave superior margin of the sternum may be used in determining the plane.

¹Philadelphia Center for Research in Child Growth, W. M. Krogman, Ph. D., Director, operating under the joint auspices of the Graduate School of Medicine and the School of Dentistry, both of the University of Pennsylvania; the Children's Hospital of Philadelphia; and the Ellen H. Richards Institute of Pennsylvania State College. A United States Public Health Service grant-in-aid provides supplementary funds.

²Martin, Rudolph: *Lehrbuch der Anthropologie*. Jena, Gustave Fischer, Vol. 1, 1928.

³Hellman, Milo: Some Facial Features and their Orthodontic Implication, *Am. J. Orthodontics* 25:927-951 (October) 1939.

⁴Krogman, Wilton M.: A Handbook of the Measurement and Interpretation of Height and Weight in the Growing Child. Monog. Soc. Res. in Child Development 13:1-68 (No. 3) 1950.

Total: Distance in MSP from *nasion* (the intersection of the MSP with the frontonasal suture as determined by palpation, from above downward, with nail of the inverted thumb) to *gnathion* (the lowest measurably determinable point in the MSP on the mandible). Measured when the teeth are in occlusion.

Upper, Number 1: Distance from nasion to *intradentale superius labiale* (the labial aspect of the apex of the dental papilla between the upper central incisor teeth).

Upper, Number 2: Distance from nasion to *incision* (the intersection of the MSP with the incisal edge of the upper central incisor teeth).

Upper, Number 3: Distance from nasion to *intradentale inferius* (the apex of the dental papilla between the lower incisor teeth).

Lower, Number 1: Distance from incision to *gnathion*.

Lower, Number 2: Distance from *intradentale inferius* to *gnathion*.

Dental: Distance from *intradentale superius* to *intradentale inferius*.

Nasal (not illustrated): Distance from nasion to subnasale (the junction of the nasal septum with the philtrum of the lip; determined with only light pressure since nasal height may be compared indicially with nasal breadth, q. v.).

Facial Breadths, Figure 1B—Measured perpendicular to MSP of face.

Bicondylar (closed): Distance between the right and left *condylion* (the most lateral point on the mandibular condyle). The teeth are kept in occlusion while measurement is taken. (HC)

Bicondylar (open): Distance between right and left condylion when mouth is wide open. (HC)

Bizygomatic: Maximum distance between the right and left zygomatic arch. (HC)

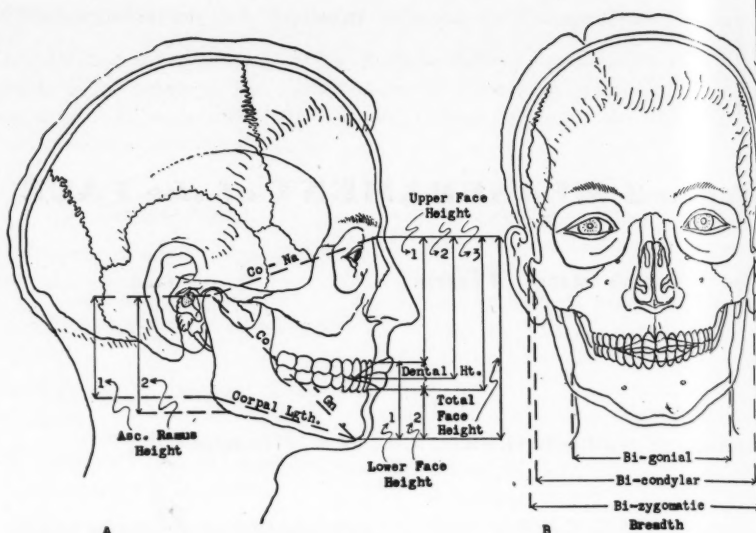
Bigonial: Distance between the right and left gonion (the point at which occurs the maximum change in direction in passing from the posterior margin of the ramus to the lower margin of the body of the mandible). (HC)

Nasal (not illustrated): Maximum distance between the alae of the nose. The arms of the SC are placed just tangent to the alae when the latter are in their normal resting position.

Facial Depths, Figure 2—Measured in MSP of face except porion-gonion.

Porion-Nasion: Distance from the biporionic axis (porion being the highest point in the external acoustic canal determinable by firm, but not traumatic, contact between the canal and the ear post, right and left of the head-spanner) to nasion. (HS)

Porion-Subnasale: Distance from the biporionic axis to subnasale (see nasal height for definition of subnasale). (HS)



1. Facial Measurements: (A) Heights, and mandibular measurements. (B) Breadths.

Porion-Prosthion: Distance from the biporionic axis to prosthion (the most anterior point in the MSP on the gingiva of the maxilla).

Porion-Intradentale Superius: Distance from the biporionic axis to intradentale superius. (HS)

Porion-Incision: Distance from the biporionic axis to incision. (HS)

Porion-Intradentale Inferius: Distance from the biporionic axis to intradentale inferius. (HS)

Porion-Gnathion: Distance from the biporionic axis to gnathion. (HS)

Porion-Gonion, Number 1: Distance from porion (for this and the following measurement taken as the highest, visually determined, point in the lateral end of the external auditory meatus) to gonion. (SC)

Porion-Gonion, Number 2: Distance from porion to the intersection of the line, continued downward from gonion, with the line tangent to the lower margin of the mandibular corpus. (SC)

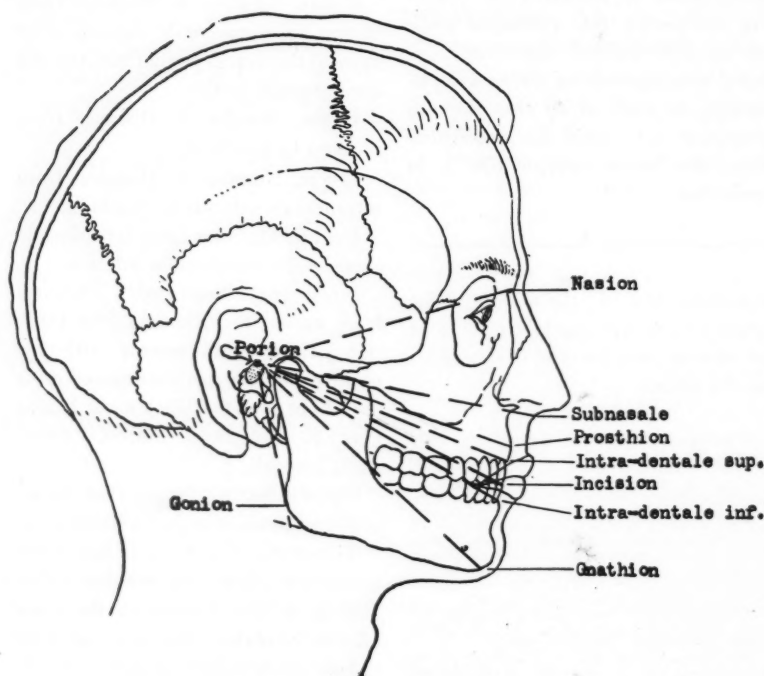
Mandibular Measurements, Figure 1A—Condylion-Nasion: Distance from condylion to gnathion, measured on left side. (HC)

Gnathion: Distance from condylion to nasion, measured on left side. (HC)

Ramal Height, Number 1: Distance from condylion to gonion. (SC)

Ramal Height, Number 2: Distance from condylion to the intersection of the line continued downward from gonion, approximately parallel to the hinder margin of the ramus, with the lower margin of the mandible. (SC)

Corpal Length: Distance from gonion to gnathion. (HC)



2. Facial Depth Measurements.

Reciprocal Relation Between Cephalofacial Structures and Entire Organism

While the primary concern may be the size and proportion of the cephalofacial structures in their relation to growth and other changes in the masticatory apparatus, the reciprocal relation between the welfare of the entire organism and that of the head and the face cannot be conveniently ignored. For that reason, the body is measured in more or less detail and these dimensions, like those for the cephalofacial parts may be referred to norms for sex, age, race, and dental eruptive stage.

Subject Assayed as a Whole—The inclusiveness of height and weight, as well as the ease of determining them, make these the most popular measurements for assaying the subject as a whole.⁴ Weight may be taken on any accurate balance scale and a suitable deduction be made for clothing. Linear dimensions (girths excepted) are measured with the anthropometer.

(A)

Factors in Orientation for Measurement—Stature and other vertical distances necessitate orienting the subject (shoes removed) in the standard erect position (SEP) which corresponds closely to the military position of "Attention!" The pendant arms (and hands) are kept fully extended, palms facing thighs. The feet, heels in contact where possible (otherwise, the knees in firm though not uncomfortable juxtaposition), have the long axes at an angle of about 45° with each other. The head is oriented so that the horizontal axis of vision is directed toward the horizon line or toward some object across the room at the level of the horizontal axis of vision.

Stature: Elevation in MSP of vertex (highest point in midline on head) above floor, subject in SEP.

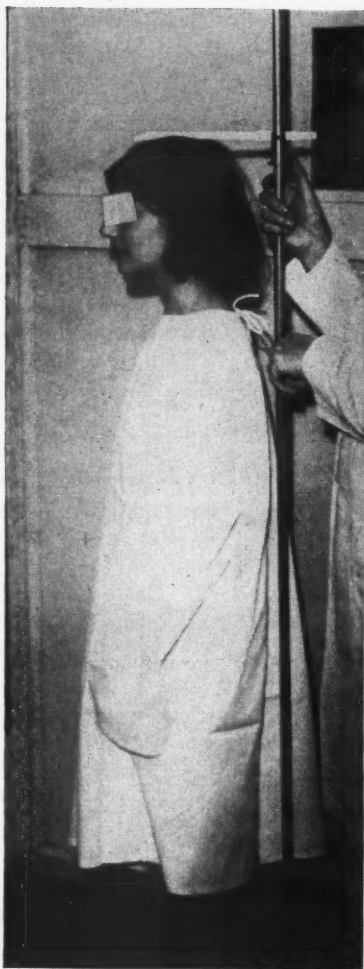
(A)

3. Sliding caliper (SC) being used for measuring total facial height.

4. Hinged caliper (HC) being used for measuring condylo-gnathion distance.

5. Head-spanner (HS) used for taking facial depth measurements.

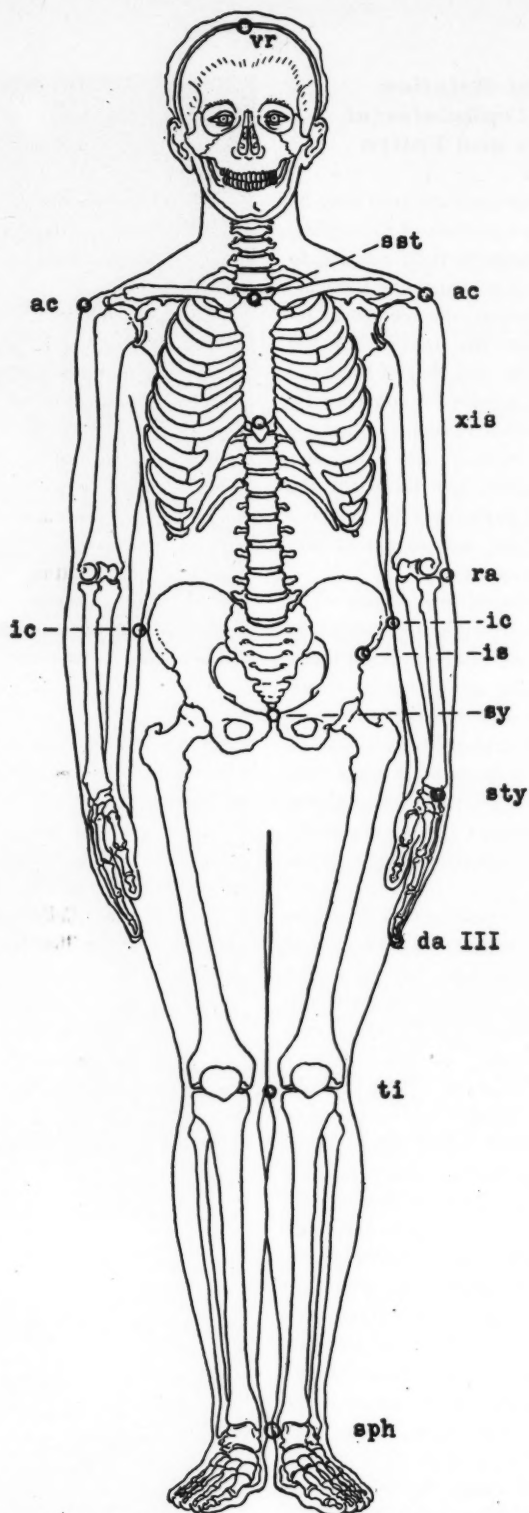




6. Anthropometer used in measuring stature and other dimensions, vertical and transverse, indicative of body size and development.

Sitting Height: Vertical distance in MSP of *vertex* above flat-topped desk or table on which subject is seated with his feet resting on a bench or chair sufficiently high so that his weight is chiefly borne by the ischial tuberosities. The subject is instructed to sit as erect as possible, abdomen tucked beneath thorax, and hands on top of thighs. (A)

Total limb length or that of component segments may be obtained by subtraction of the vertical distance (subject in SEP, shoes removed) measured with the anthropometer above floor of the successively more distal measuring points from those more proximal, as follows:



7. Measuring points on body as viewed in normal frontalis. In midsagittal plane: *vr*, vertex (upper terminus for measurement of stature and sitting height); *sst*, supra sternale; *xis*, xiphisternale; and *sy*, symphision (used in measurement of trunk height). Lateral to MSP: *ac*, acromiale; *ra*, radiale; *sty*, stylium, and *da III*, dactylion III (used in measurement of length of total arm and of its component segments); *is*, iliospinale; *ti*, tibiale; and *sph*, sphyron (used in measurement of length of total leg and of its component segments); *ac*, acromiale; *ic*, iliocristale, and *tro*, trochanterion (used respectively in measuring shoulder width between iliac crests, and width between great trochanters).

Total Arm Length: *Acromiale* height (the most lateral palpable point on the acromial process of the scapula minus dactylion III height (fleshy tip of second, fully extended finger)).

Upper Arm Length: *Acromiale* height minus *radiale* height (the most proximal, palpable point on head of radius).

Forearm Length: *Radiale* height minus *stylium* height (the most distal, palpable point on styloid process of radius).

Hand Length: *Stylium* height minus dactylion III height.

Total Leg Length: Frequently (USA), though inaccurately, obtained by subtracting sitting height from stature. Other techniques include: (1) vertical distance of *ilio-spinale* (most anterior, inferior point on the anterior, superior iliac spine) above floor, either alone or suitably corrected for distance between *ilio-spinale* and head of femur, (2) the mean of *ilio-spinale* height and *symphyseum* height (highest point in MSP on pubic symphysis), vertically above floor.

Lower Leg Length: *Tibiale* (the most proximal point on the medial condyle of the tibia) height vertically above the floor minus *sphyrion* (the most distal point on the medial malleolus of the tibia) height above the floor. Limb measurements usually are taken on one side only, commonly the left.

Transverse Dimensions—With subject in SEP the transverse dimensions taken to find trunk size include the following:

Biacromial Breadth: Distance from *acromiale* to *acromiale*, measured approximately perpendicular to MSP. (BC)

Chest Breadth and Depth: Measured perpendicular to each other in a horizontal plane at proximal end of xiphoid process of sternum. (BC)

Bi-iliac Breadth: Distance from *iliospinales* (most lateral point on iliac crest) to *iliospinales*, measured approximately perpendicular to MSP. (BC)

(The index, sitting $H \times 100 /$ stature, expresses relationship of sitting height to stature while the trunk index, bi-iliac $B \times 100 /$ biacromial B, indicates the ratio of maximum breadth of hips to shoulder breadth. Both indexes show sex and age difference. Other indexes are also used).

Instruments

All instruments are conventionally calibrated in numbered centimeters, subdivided into tenths (millimeters).

The Sliding Caliper—A straight scale-bar, 250 millimeters long, with two cross arms which extend equidistantly beyond each edge of the scale. One cross arm is permanently attached at the zero end of the scale while the other is freely movable. Only the blunt end of the cross-arms should be used when measuring the living.

The Hinged Caliper—Pivoted like a drawing compass, the hinged caliper has its two legs, markedly curved in the distal half, terminated with small globular ends. The straight scale-bar, transversely attached, measures to 300 millimeters.

The Head-spanner—The Western Reserve, the most convenient type of head-spanner, consists of an inverted U-shape frame fitted at the free ends with two cylindrical sliding ear-posts, fixable by means of binding posts, and an infraorbital bar. The latter is used when head height is measured. The scale, which slides through the center of the frame, has its zero coincident with the surface of the ear-rods which is directed toward the top of the inverted U.

The Anthropometer (Martin Type)—A 4-section, three-quarter round, hollow, nicked brass rod (200 centimeters long) fitted with one fixed and one movable sleeve in each of which slides a flat cross arm perpendicular to the rod. The facing edges of the opposable cross arms are parallel to each other. The uppermost section of the anthropometer, with the two transverse arms, forms a large sliding caliper, usually termed a beam caliper. (BC) Wooden anthropometers have been devised and used by some observers.

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Oxygen Therapy

ROWE SMITH, D.D.S., Texarkana, Arkansas-Texas

Valuable Aid in Treatment

Experience has shown that oxygen therapy is the most effective means for (1) rapidly stopping the progress of Vincent's infection, (2) eliminating etiologic factors, (3) aiding in repair of the tissue damage without further injury, and (4) preventing recurrence.

Differs from Other Agents—Oxygen differs from all other periodontal therapeutic agents in that it acts favorably within the tissues as well as on them. This action changes the character of the gingival and mucosal

tissues so that they become more resistant to infection.

Condition Peculiar to Oral Tissues—It has been shown that unusually large numbers of plasma cells, which denote chronic inflammation, accumulate in the tissues adjacent to periodontal lesions.

Cell Oxidation Improved—Poor oxidation seems to cause plasma cells. Increased oxygen improves cell oxidation. Following periodontal treatment without oxygen therapy these cells are reduced in number but usually excessive numbers remain after

clinical symptoms have disappeared and tissue repair seems to have taken place.

Possible Explanation for Recurrence—Poor oxidation may explain why there is a tendency for a recurrence or tissue reversion after treatment of all types of periodontal diseases in which oxygen has not been employed as a part of the treatment, and periodically as a prophylactic measure.

Oxygen Therapy in Conjunction with Other Treatment—Wherever
(Continued on page 455)

DETACHING of CONDYLES:

Correction for Prognathism

WILLIAM I. OGUS, D.D.S., Washington, D.C.

DIGEST

This case history describes the surgical steps taken to correct a severe prognathism which interfered with the patient's speech.

Two years and four months after surgery the patient's recovery was complete and his power of speech fully restored.

History

A fifty-three-year old white male was referred by his physician and dentist. He presented the following symptoms:

1. Two years earlier he developed an impediment of speech and later a total loss of speech and now communicated by writing.

2. The patient's loss of weight was from 186 pounds to 150 pounds.

3. The mandible was in protrusion (prognathism position) with a permanent subluxation of the mandible. The mandible had been reduced from subluxation on many occasions, at times as an emergency, by operators who did not understand subluxation reduction.

4. The normal position of the mandible now was in subluxation position with the condyles outside of the glenoid fossae. Figure 1, A and B, shows the patient at this time.

Past Treatment—1. The patient had consulted private diagnostic clinics without positive results. 2. Examination by a nose and throat specialist revealed no disease in the larynx. 3. Neurologic diagnosis was an involvement of the nervous and the respiratory systems.

Origin of Difficulty—The patient stated that the present difficulty occurred after he had a second attack of seasonal hay fever which produced violent sneezing which affected the respiratory system. It was the patient's belief that these paroxysms caused the mandible to move forward and press on a nerve. When speaking, the patient was forced to stop in the middle of a sentence because of breathlessness and inhale deeply. When he tired from talking a muscular spasm was experienced in the right side of the neck. The patient lost confidence because of the speech handicap and resorted to communication by writing.

Clinical Examination—1. The mandible protruded. 2. The condyles could be felt out of the glenoid fossae, and the mandible remained in subluxation. Although the condyles could be placed in the glenoid fossae and the subluxation reduced, the patient complained of severe pain in this position and the mandible slid back into subluxation immediately. 3. When the mandible was placed in normal position it showed a definite prognathism relation and the patient gave a history of an overjetting of the lower teeth prior to extraction. 4. The mandible was edentulous. Ten upper teeth (centrals, lateral, cuspids, and bicuspids) remained. The molars had been extracted many years earlier.

Roentgenographic Results, Figure 2—The roentgenographic survey shows the mandible in subluxation and prognathism position. This is the

patient's appearance at the time of the first examination.

Preoperative Steps—1. A head cap was made to fit the patient's head and straps and buccal extensions were attached. 2. The old lower denture of the patient was prepared by grinding the occlusion flat. Holes were cut in the denture to accommodate circumferential wiring; the teeth were wired with continuous Stout wiring. 3. The upper teeth were wired with continuous wiring. 4. Laboratory examination showed Wassermann and Kahn tests to be negative; urinalysis, negative. 5. The patient was admitted to hospital and after a thorough examination was pronounced a satisfactory surgical risk and the usual preoperative technique was applied.

Surgery

Internal Procedure—1. A general anesthetic was administered.

2. The operative field was sterilized and the patient was draped.

3. Circumferential wiring was performed on both sides of the mandible, entering through the mucobuccal fold under the mandible, and coming through the lingual.

4. Wires were brought through the lower denture, inserted, and fastened so that the denture was stable on the lower arch.

External Procedure—After completing the internal technique the area was resterilized and the external surgery performed as follows:

1. External pins were placed on both sides of the mandible in the bicuspid molar area. Small incisions were made, the electric drill was used to place pins, and pins were placed



1. (A) Preoperative; (B) preoperative; (C) preoperative, mandible in subluxation; (D) postoperative, two days; (E) postoperative, three months; (F) postoperative, three months. Completed; (G) postoperative.

diverging. Bars were fastened to pins as shown in Figure 3.

2. An incision was made behind the anterior lobe of the ear and internal part of the mandible.

3. The aneurism needle was forced under the mandible through the sigmoid notch. When the aneurism needle was felt externally, an incision was made and the needle forced through. A Gigli saw was wired through the eye of the aneurism needle, and the needle was brought back

through the path made, followed by the Gigli saw.

4. The wire was set in motion slowly and the head of the condyle detached. The condyle was forced into the glenoid fossae.

5. Hemorrhage was controlled by pressure and surgery was completed by suturing. The opposite side was done in a similar manner.

6. The head cap which had been made previously to fit the head was placed in position. The mandible was forced posteriorly to the position desired, straps with buccal extensions were attached with heavy rubber bands to the bar pin fixation to hold the mandible in position. Rubber bands placed from loops were left in



2. Preoperative, mandible in subluxation.

continuous wiring on the upper teeth and lower denture.

Postoperative Procedure

1. A liquid diet was given through tube and one-quarter grain of morphine sulfate was administered.

2. The patient's temperature on the second day was 100.2 degrees. Liquid diet was continued and 300,000 units of penicillin were administered. Improvement in the patient's condition was noted.

3. On the third day temperature

was 99.6 degrees. Liquid diet was continued and 300,000 units of penicillin were administered. Improvement in the patient's condition was noted.

4. Temperature was normal on the fourth day. Liquid diet was continued and mouth irrigation, begun on the fourth day, was continued for one week when the patient was discharged from the hospital.

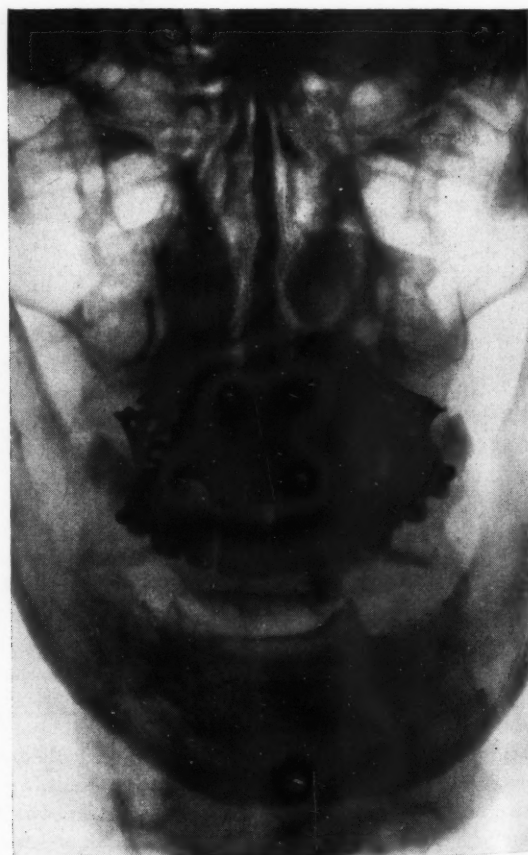
5. The patient returned to the office daily for treatment for one week following dismissal from the hospital after which his physician and dentist attended him.

6. After five weeks the head cap, the external pins, and the bar were removed. The intermaxillary was wired.

7. The patient returned to the office after three months with dentures completed by his dentist, upper partial and full lower, including deep cusp formation to prevent anterior or forward movement (Fig. 4).



3. Postoperative, two days after surgery.



4. Postoperative, three months.



5. Postoperative, three months. Completed.

Conclusion

After a period of four months this patient returned to his normal duties as a shipbuilder. He had been out of work over two years. He continued to work during the five months following surgery without loss of time. He regained 24 pounds in weight, his color and appetite were good, and he slept well. His outlook on life had improved and it was the author's belief that the patient would regain complete power of speech. The patient's condition at the end of the four-month postoperative period is shown in Figures 5 and 1.

Twenty-eight months later the patient had assumed a normal life. His speech was fully restored.

1832 Eye Street, N.W.

Oxygen Therapy

(Continued from page 451)

tank oxygen or nascent oxygen is properly administered, plasma cells disappear and an active mesenchyme tissue replaces the plasma cells. Employment of both forms of oxygen seems to give the best results. For this reason any type of periodontal treatment will give better results if oxygen therapy is employed in conjunction with it.

Where oxygen is properly employed in the treatment of Vincent's infection the following results are obtained: (1) It destroys the accompanying anaerobic organisms, (2) helps to nullify the bacterial toxins, (3) aids in the elimination of necrotic tissue which protects bacteria

from drug action; (4) it replenishes the partly depleted oxygen tensions of the affected tissues, (5) reduces venous stagnation and improves local tissue metabolism and resistance.

The local hyperemia produced rids the cells of inflammation in the debilitation of destroyed tissues and in carrying away the waste products which aids in rapid repair of the damaged tissues.

Complications — Often complete control or a cure cannot be accomplished in Vincent's infection by any single form of treatment because the condition is complicated by the presence of (1) supragingival and subgingival calculus, (2) gingival pockets and flaps where the lesions are superimposed upon the epithelial lining of the pocket, (3) faulty contacts, and (4) by nutritional disturbances.

Additional Measures—In the presence of complications all the various aids known (1) scaling, (2) subgingival curettage, (3) gingivectomy, (4) exodontics, (5) restorative dentistry, and (6) correction of nutritional deficiencies must be employed diligently if periodontal health is to be established and maintained.

Uncomplicated Vincent's Infection—Oxygen therapy will produce a cure in uncomplicated Vincent's infection.

Systemic Disturbances in Vincent's Infection—An acute Vincent's infection is often accompanied by severe systemic disturbances: 1. The temperature may be as high as 104 degrees Fahrenheit. 2. The patient may complain of severe pain, loss of appetite and body weight, and extreme malaise. 3. Often the crevicular lymph nodes are tender and enlarged. 4. Blood examination usually shows a moderate elevation of the white cell count and an increased sedimentation rate.

Rapid Improvement—Within twenty-four hours after the first oxygen treatment general improvement of the patient's condition is noted: 1. He is able to take nourishment, his temperature returns to normal, and extreme weakness and malaise are greatly lessened. 2. All pain is eliminated almost immediately and extreme soreness and tenderness disappear in twelve to thirty-six hours.

Prevention of Self-Treatment—Oxygen therapy has a distinct advantage because no mouthwashes or other home medication are required. This prevents (1) self-treatment, which often terminates disastrously, and (2) the tendency for patients who have had Vincent's infection to attempt to treat other members of their family which often permits the disease to become chronic with irreparable loss of vital periodontal and dental tissue.

Other Applications—Oxygen has also proved to be effective in the treatment of sub-acute Vincent's infection and all types of gingivitis, such as (1) hypertrophic (including the type caused by sodium dilantin therapy), (2) hemorrhagic, (3) pregnancy, (4) adolescent, and (5) desquamative.

When oxygen is judiciously employed as a periodontal therapeutic aid, desirable clinical changes can be observed, such as (1) change in gingival color from the ischemic and many red, bluish, deep purple, or cyanotic shades noted in the mucosa when affected by the various types of periodontal disturbances, to a normal rosy pink color; (2) chronic, slow, sporadic hemorrhage ceases, (3) gingival edema subsides, the gingival tissues lose their loose, flabby condition and are restored to a more normal contour, and (4) a decrease in the abnormal mobility of the affected teeth may be noted.

In nearly all types of periodontal disease it appears that in some manner the tissues are deprived of the required amount of oxygen. It seems that the favorable tissue changes observed following adequate oxygen therapy are due to the artificial increase of oxygen in the tissues which helps to restore their integrity.

In other words, oxygen therapy is artificial respiration for impaired periodontal tissues.

Failure to employ oxygen in periodontal treatment is an unnecessary handicap in obtaining and maintaining the maximum favorable result.

Adapted from *The Forum, Journal of the Canadian Dental Association* 17:452-453 (August) 1951.

APLASTIC ANEMIA

Initially Observed in Dentist's Office:

A Case Report

MILTON GOLDSTEIN, B.A., D.D.S., Elmhurst, L.I., New York

DIGEST

Diseases of the blood are frequently discovered on complaint of oral lesions. The patient in this case history experienced an episode of uncontrollable gingival bleeding. Apparently well nourished and in no distress otherwise, the initial symptom of what proved to be a grave dyscrasia of the blood with a fatal termination was the oral manifestation of bleeding gingival tissue.

Case History

A young woman, twenty-four years of age, single, by occupation a bank teller, presented with the chief complaint of bleeding gums.

Past History—The patient stated that she had received occasional treatment for a gingival tissue condition during the past two years. The condition had never been as severe as the present episode.

Incident—The patient reported awakening that morning to find her pillow covered with blood. She had no complaint of pain but rather of the physical discomfort of a mouthful of blood. She attempted rinsing with peroxide of hydrogen on her own initiative and although this procedure made her mouth feel better it did not diminish the bleeding.

Clinical Examination

1. Clinically, a picture was presented of spontaneous bleeding from the gingival crevices with failure of

clot retraction, particularly in the upper left molar region.

2. The tongue, cheeks, sublingual areas, palatal areas, and throat presented no unusual conditions.

3. No gland or lymph node involvement was observed.

4. Temperature was normal.

5. The patient manifested several small patches of petechiae on cutaneous areas of the neck and arms. She reported similar purpuric areas on the legs. These petechiae were of a purplish reddish color and had been present for "a day or so." Extra-oral examination revealed no other unusual conditions.

Patient Referred to Physician

The observation of unusual spontaneous bleeding accompanied by cutaneous petechiae immediately aroused suspicion of a blood dyscrasia. The patient was referred to her physician for a complete evaluation. The physician prescribed prompt admittance to the hospital for a thorough diagnostic examination.

Preliminary blood examination revealed prolonged bleeding time, normal coagulation rate, associated with failure of clot retraction, and accompanied by marked reduction of blood platelets and reduction of white cell count.

Hospital History

When admitted to the hospital the patient was observed to be a pale, well-nourished girl in no distress who was bleeding from the oral soft tis-

sue, had several ecchymotic areas on her forearms and shins, and a purpuric rash, particularly on the arms and legs.

Laboratory Report—Blood pressure, 135/85; urinalysis, unremarkable; red blood count, 2.7 million; hematocrit reading of 38; no platelets seen on platelet count; erythrocytes, normochromic; white blood count 2,300; lymphocytes 86 per cent; mature polymorphonuclear lymphocytes, 4 per cent; band forms, 6 per cent; bleeding time, 18 minutes; clotting time, 8.5 minutes; no clot retraction in twenty-four hours.

Initial Diagnosis—The patient was considered to have purpura and was given whole blood and penicillin. General palliative oral care was administered.

Treatment—In the next thirteen days the patient received 500 cubic centimeters of whole blood a day. Platelet counts early in her hospital stay were 20,000 to 50,000 but later rose to 140,000. A sternal aspiration on the third day revealed a total of 7,000 cells per centimeter, 92 per cent lymphocytes, 4 per cent eosinophiles, 4 per cent erythroblasts, no megakaryocytes.

Transfusion Results—Even with transfusion the white blood count dropped to 1,000, and then to 600 with 2-10 per cent polymorphonuclear leucocytes, and 0-2 per cent band forms. The hemoglobin was maintained at 13-17 gram per cent. Prothrombin time was normal, sedimentation rate 51 millimeters in one hour.

Shock Ensued—The patient was extremely weak and in the early morning of the thirteenth day went

into a state of shock with a blood pressure of 80/50, pulse of 160, and respiration 32, became cyanotic and died.

Careful investigation revealed no history of exposure to any toxin or drug.

Final Diagnosis

The final diagnosis in the case was that of aplastic anemia.

Description—Aplastic anemia is a rare disease known also as aregenerative anemia. In this disease there is greatly diminished activity of the bone marrow so that the red cell blood composition which characterizes the blood regeneration of pernicious anemia is absent.

Etiology—The etiology of aplastic anemia may be of an idiopathic, toxic, or infectious nature.

Prognosis—The prognosis of idiopathic aplastic anemia is grave, death occurring within a few months regardless of treatment. Differential diagnosis on the basis of oral and hemorrhagic lesions must be made from agranulocytosis, thrombocytopenic purpura, leukemia, infectious mononucleosis, and polycythemia vera.

41-03 Case Street.

Traumatic Occlusion and Prosthetic Procedure

S. Charles Brecker, D.D.S., and I. Franklin Miller, D.D.S.

A Dentally Conscious Patient

The patient who has (1) always valued his teeth, and (2) visited his dentist regularly and never questioned the cost of treatment believes himself properly educated dentally.

Results of Improper Care

On examination of this patient the following conditions are found: 1. All the posteriors back of the lower left cuspid are missing. 2. The upper six-year molar is missing. 3. The two other molars and the bicuspid are extruded several millimeters. 4. On the lower right side the second bicuspid and the first molar are missing, and in the upper, the first bicuspid and first molar are missing. 5. A lateral has been devitalized, the other incisors have a number of leaking synthetic restorations, and the amalgam restorations in the remaining posteriors are broken down, and the teeth pitted with recurrent caries. 6. Although told that he would get used to it, the patient has been unable to wear his partial denture.

Complete Treatment Possible

To the objections that complete restoration of the mouth is too expensive, time-consuming, and too involved for the average practitioner, proof of the contrary is in fifteen years of consistently doing just this (complete treatment and nothing else) never deviating, never compromising, never suggesting an al-

ternative plan or any other choice of treatment.

Correct Occlusion a Requisite

A tolerant occlusal relationship with three main objectives should be established:

1. Comfort and satisfactory function in mastication.
2. A minimum amount of trauma to the hard and soft tissues involved in the masticatory apparatus.
3. Pleasing esthetics.

Many Methods Advocated—The practitioner should not refer to a single pattern or mechanical contrivance with regard to cuspal interrelationships. The limitations of the jaws and teeth of each patient must be considered; what may be the correct occlusal balance in one case, obtained by one type of mechanical device, may disturb the harmony of the masticatory machine in another case.

Factors in Success—In each case involving extensive restorations throughout the mouth success is influenced by (1) the knowledge, (2) experience, (3) the foresight, and (4) the dexterity of the operator.

Attention to Inclined Planes

The occlusion changes with the gliding movements over the years. Teeth which once possessed sharp inclined planes have become flatter by wear. In these cases it is not advisable to construct deep-fissured, over-carved cusps which tend to contribute to trauma. Restorations with

completely flat occlusal patterns also prove inadequate in masticatory function.

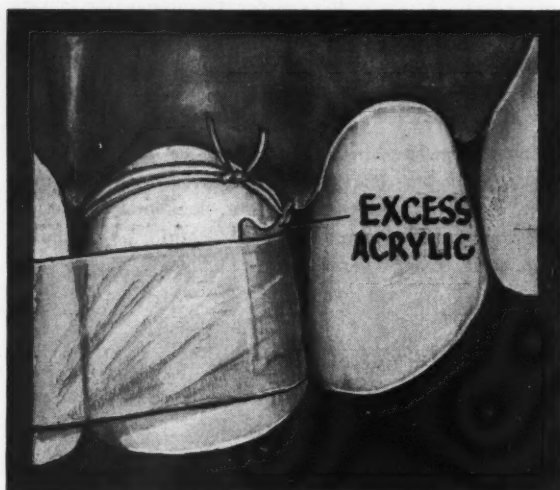
Ideal Restoration—The ideal is the crown or bridge with (1) low cuspal inclines possessing some sluiceways, and (2) with less buccolingual width than the natural teeth. Carved abutment and pontic teeth must not produce any wedge action in occluding restorations. Too hard a casting gold on occlusal surfaces proves detrimental to the periodontium. The soft occlusal surfaces, such as acrylic only, do not stand up well. If porcelain is to occlude with porcelain, removal of the high glaze is recommended for a more satisfactory occlusal relationship.

Biologic Concept Important—Mechanics in reconstruction are important but one must not neglect the biologic concepts of the entire masticatory machine with its muscles and bone. These tissues have developed in harmony and overcarved cusps produced by mechanical means may disturb this harmony.

Occlusal corrections are made (1) by judicious, conservative grinding or (2) by restorations, in order to improve function and eliminate trauma. When restorations are needed for occlusal correction they must be planned to attain as nearly as possible an ideal occlusal relationship between mandibular and maxillary teeth. In this way both function and health will be served.

Adapted from Dental Concepts 3:9-11 (July) 1951.

1



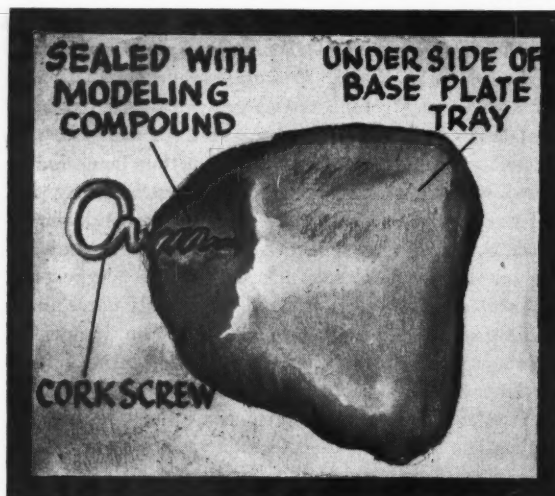
Clinical and Laboratory

Aid to Finishing Acrylic Restorations

Vassar Higgins, D.D.S., Holyoke, Mass.

1. Tie dental floss twice around the neck of the tooth. The floss restricts seepage of moisture and acts as a stop for excess acrylic causing it to curl out from the tooth surface. This allows easier removal of the excess material.

2



A Handle for a Baseplate Impression Tray

5. Joseph Bregstein, D.D.S., Brooklyn

2. A small metal corkscrew that is used with some cement liquid bottles is embedded in a piece of modeling compound and attached to the baseplate tray. This is used as a convenient handle for the tray.

3



Suggestion for an Office Placard

J. W. Siegfried, D.D.S., Santa Monica, California

3. An appointment broken is time lost forever. A tardy patient inconveniences a dental schedule. An appropriate suggestion to the patient is carried on this placard for use in the reception or operating room.

READERS are Urged to Collect \$10.00

For every practical clinical or laboratory suggestion that is usable, DENTAL DIGEST will pay \$10.00 on publication.

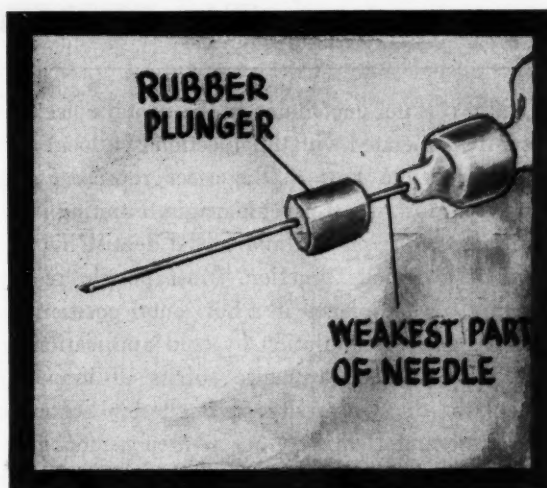
You do not have to write an article. Furnish us with rough drawings or sketches, from which we will make suitable illustrations: write a brief description of the

SUGGESTIONS . . .

A Safety Device for Injection Needles

Richard F. Grainger, Leeds, England

4. The rubber plunger from an anesthetic tube is removed from a used tube and impaled on the needle of the syringe. It is slid down the needle to a position just short of the hub. With the rubber in this position the weakest part of the needle is still at the hub. In the event that the needle breaks, the cylinder or rubber prevents the needle working into the tissue and provides a convenient handle for the removal of the broken portion.

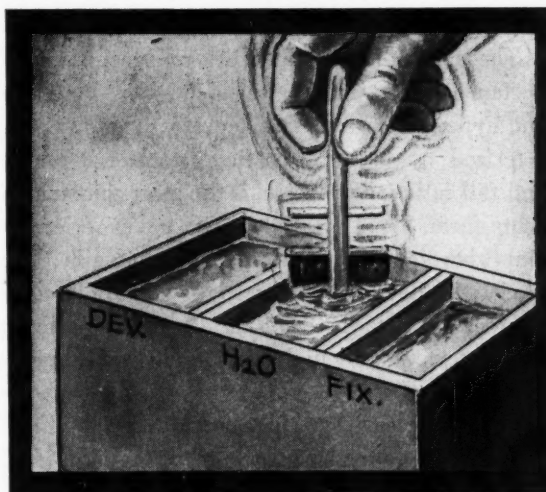


4

Speeding X-ray Processing

Henry O. Cubbon, D.D.S., Harvey, Illinois

5. When an x-ray is needed in an emergency a problem is waiting for the film to clear. If the film is agitated several times in water after developing it will clear more evenly and may be viewed much sooner.

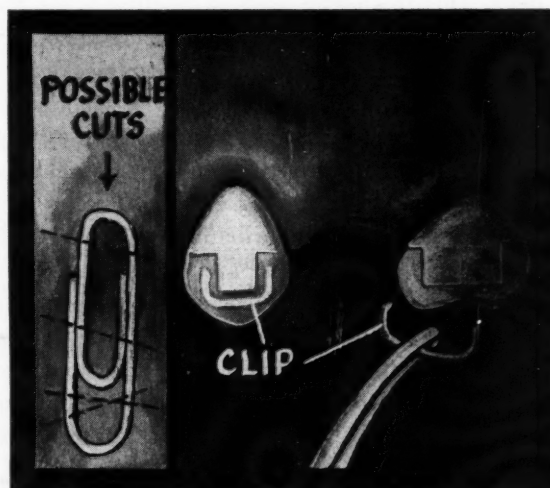


5

Reinforcing a Temporary Stopping

Herschel S. Glick, D.D.S., Los Angeles

6. Cut a paper clip as shown in the illustration. After the temporary stopping is in the cavity warm the metal reinforcement and push it to place to be embedded in the stopping. If a surgical pack is used place the metal in the material before it is hardened.



6

technique involved; and jot down the advantages of the technique. This shouldn't take ten minutes of your time. Turn to page 474 for a convenient form to use.

Send your ideas to: Clinical and Laboratory Suggestions Editor, DENTAL DIGEST, 708 Church Street, Evanston, Illinois.

The EDITOR'S Page

FAINTING is not uncommon in the dental office. It is usually associated with the injection of a local anesthetic solution. Few of the cases represent drug toxicity. Most are of psychic origin. Fainting is disquieting to the patient and to the dentist but it is seldom a serious reaction. Most people recover promptly when placed in a horizontal position and receive gentle stimulation by cold applications or the inhalation of aromatic spirits of ammonia. Engel, of the University of Rochester School of Medicine and Dentistry, has written a monograph on fainting.¹ He believes that a fall in arterial blood pressure accounts "for the largest proportion of fainting experiences." And that "disorders of heart action account for a relatively small proportion of fainting experiences."

There are three main types of syncope of importance to the dentist: vasodepressor, hysterical, and hyperventilation. Vasodepressor fainting, characterized by pallor, sweating, weakness, nausea, and fall in blood pressure, is the most common and acute form. "It is associated with the experience of fear where action is inhibited or impossible." The anxiety-producing situation in the dental office does not lend itself to the draining off of tension by appropriate action, by flight, or even by violent verbal expression.

Vasodepressor syncope, according to Engel, "may occur among more or less healthy individuals in settings of overwhelming danger where escape or activity is impossible. More commonly it occurs when an individual experiences fear which he must deny. This frequently leads to fainting in the doctor's office when facing or experiencing minor procedures, when expression of the fear may lead to ridicule or rebuke." Many otherwise emotionally healthy people experience vasodepressor syncope the first time they encounter dental or surgical procedures and do not faint again.

The sex and age distribution of persons who faint is important: "There are significant age and sex differences in the incidence of the various types of fainting. Fainting that is neurotic in origin, either vasodepressor, hysterical, or due to hyperventilation almost always begins early in life, usually around puberty and rarely after thirty-five

years of age. Often a history of fainting in childhood is elicited. Among men vasodepressor syncope is more common while among women hysterical syncope and hyperventilation are more common. Hysterical syncope differs notably from the other types in that it is unaccompanied by changes in color, pulse, or blood pressure. Benign tachycardias without organic heart disease are also more common in the younger age group.

"When repeated fainting begins after middle life organic disease of the heart, cerebral blood vessels, and vagus and sympathetic reflex pathways are the most likely causes. Neurotic fainting beginning after thirty-five years of age is rare."

In terms of clinical experience young men and young women who faint in the dental office present the most frequent examples and such cases are not usually of any serious significance. Recovery is immediate and it is usually possible to proceed with the operation as planned. Loss of consciousness among older people, those in the age bracket where the degenerative diseases are common, should be considered as an emergency with possible serious implications.

In Engel's excellent presentation on fainting he makes frequent reference to hyperventilation or overbreathing as it is called by the British. Hyperventilation is not only of importance because it may lead to syncopal symptoms, but it is also the source of other symptoms. Hyperventilation has its origin in anxiety. The anxious person breathes too rapidly and thus unbalances his residual carbon dioxide reserve. Symptoms of dizziness, lightheadedness, blurred vision, dry mouth, numbness of the hands, face and feet, muscle stiffness may result from overbreathing. These distressing but not dangerous symptoms increase the anxiety. The increase in anxiety makes the person overbreathe or hyperventilate the more. The symptoms are then accentuated. The vicious circle must be broken. The anxious patient must be taught to breathe slowly and deeply, to use the abdomen and the diaphragm in breathing as well as the upper part of the lungs. If the nervous person can train himself to recognize when he hyperventilates he may free himself of many of the strange sensations and symptoms that plague him.

¹Engel, George L.: Fainting, Springfield, Illinois, Charles C Thomas, Publisher, 1951.



Treatment of Burns with ACTH

The concept of treatment for severe burns is being radically changed. A limited number of patients with severe burns (where over 60 per cent of the body surface is involved) have been treated with the pituitary adrenocorticotrophic hormone, ACTH. The carefully recorded results have been truly amazing.

Extensive burns are usually associated with certain physiologic phenomena. These are: (1) severe pain, (2) fever, (3) shock and toxicity, (4) increased cellular permeability (oozing) and decreased renal function, (a) loss of sodium and chloride, (b) loss of fluids, (c) loss of protein, (d) retention or loss of potassium depending in the degree of the catabolic state and the magnitude of the sodium loss; (5) hemoconcentration, (6) suppuration and infection, (7) loss of appetite, hypoproteinemia and negative nitrogen balance, (8) progressive anemia, (9) excessive granulation tissue and excessive fibroblastic proliferation, and (10) inhibition of epithelization.

All of these phenomena may be inhibited or reversed by adequate physiologic adrenal cortical stimulation with ACTH. Circulating endogenous adrenocorticotrophic hormone appears to be quantitatively insufficient to meet the acute stress of severe burns. When the adrenal cortex is adequately stimulated by administration of exogenous adrenocorticotrophic hormone the physiologic phenomena usually present in severe burns are either eliminated or appreciably reduced.

The records of the cases recorded are dramatic. Heretofore, patients who had 60 per cent of their body surfaces burned were given little chance for survival. Skin grafts are possible much sooner in most cases. And these grafts are more successful because of the favorable epithelization of entire areas.

There is a tremendous saving in both medical personnel and supplies as compared with the conventional methods of treatment. This is impor-

M E D I C I N E

and the Biologic Sciences



tant in the light of the present world situation. Modern warfare with the weapons presently used and those contemplated produces extensive burn injuries in both military and civilian groups. And not only is the prospect for treatment of burns brighter but also the possibilities for transplantation and plastic surgery will be immeasurably improved.

Whitelaw, M. James: *Physiological Reaction to Pituitary Adrenocorticotrophic Hormone (ACTH) in Severe Burns*, *J.A.M.A.* 145:85-88 (January 13) 1951.



Streptomycin Hypersensitivity

Some patients develop reactions following the administration of streptomycin. In personnel associated with the manufacture or administration of the drug varying degrees of reactions are noted in many instances.

The skin lesion is typically itching and redness in the interdigital spaces of the hands. In the more serious cases, erythematous plaques with

minute papules and crusts and sometimes fissures are present. The drug is not a primary skin irritant. Patch tests on persons who have never received the drug or been exposed to it are negative.

Other reactions to streptomycin are: (1) urticaria, (2) drug fever, (3) eosinophilia, (4) exfoliative dermatitis, (5) contact dermatitis, (6) asthma, and (7) joint swelling. In the urticarial type of reactions the antihistamines are of value. However, in contact dermatitis the histamines are of no value.

Some clinicians believe that the vestibular damage attributed to streptomycin is associated with the allergic nature of the reactions in the individual case. More work is being done along this line.

Before beginning a course of streptomycin it is wise to question the patient as to previous contact with streptomycin (either as nurse, pharmaceutical worker or patient) and as to the history of hypersensitivity to other allergens. If there has been previous contact or if the patient gives a history of allergy, a skin test should be done to determine hypersensitivity to streptomycin. If hypersensitivity exists, desensitization should be carried out before therapy is begun. Desensitization is possible in most cases.

Cohen, Archibald C., and Glinsky, George C.: *Hypersensitivity to Streptomycin*, *J. Allergy* 22:63-70 (January) 1951.



Lung Cancer— Incidence

Available records show that the incidence of lung cancer is increasing rapidly. In 1930 there were only two deaths from cancer of the respiratory system reported in Michigan. The figures for 1948 in the same state show 772 such deaths; 80 per cent of these were males and 20 per cent females.

The rapid increase may be associated with several factors: (1) Improved diagnostic methods have shown that many cases of "atypical" tuberculosis, where no specific organ-

ism could be found to explain the signs and symptoms, are in reality cancerous growths. (2) Smoking, particularly excessive or chain cigarette smoking, is strongly suspected of close association with bronchogenic cancer. (3) Inhalation of dust by miners of radioactive minerals has long been recognized as the cause of lung cancer in such persons. (4) The preponderance of the disease in males suggests other possible causative factors as yet undetermined. Cancer of the lung promises to equal or even surpass in a short time cancer of the stomach as the principal site of cancer in males.

The majority of lung cancers are in an advanced stage when diagnosed. The earliest symptoms are so mild as seldom to arouse the suspicion of either the patient or physician. A slight cough and a slower than usual recovery from an upper respiratory infection are ignored although they may be the first warning signs especially in a person past middle age. Hemoptysis, which seldom occurs in early cases, usually is the symptom that brings the patient to the physician. Auscultation may reveal a wheezing rale if partial bronchial obstruction has occurred. Slight irregular fever may be noticed for some time accompanied by increasing fatigue on exertion.

Patients with these signs and symptoms should be subjected to careful and thorough examinations. Repeated x-rays of the chest may be necessary. In differential diagnosis, (1) benign tumors, (2) pulmonary abscess, (3) pneumonia, and (4) tuberculosis must always be kept in mind.

Pneumonectomy is the only treatment offering hope for cure. Lobectomy may suffice in favorable early cases.

Many clinicians maintain that every male patient, 40 years of age or older with indefinite lung symptoms, should be considered a cancer patient until proved otherwise.

Editorial: Cancer of the Lung, J. Michigan M. Soc. 49:1211-1212 (October) 1950.



The Syphilis Problem— Present Status

The management of syphilis has been revolutionized in less than a decade by the introduction of penicillin. Authorities in this country are now generally agreed that, with rare exceptions, penicillin is entirely adequate to cope with all phases of syphilis from chancre to paresis.

There is a definite decline in the incidence of syphilis in this country especially in early syphilis, since the postwar peak of 1947. In 1947 the United States Public Health Service reported 373,296 cases of syphilis. In 1949 there were 288,640 cases reported. Some of the rapid intensive treatment centers have been discontinued because of a decrease in case load.

No decrease in the number of cases of congenital syphilis has been noted. In fact, in the past two years, an increase was reported. Probably this is due to more intensive efforts at case-finding in screening surveys in neglected areas. Also it may be due to the increased incidence of early syphilis during war years, many instances of which were not recognized or perhaps received inadequate treatment and relapsed.

The crux of the situation in the control of syphilis is to discover the patient who has syphilis; the earlier the better. Too frequently, patients under the care of private practitioners are not reported. As a result the contacts of these patients are not checked.

Once the diagnosis of syphilis has been made and treatment is found necessary, penicillin is the agent of choice. In latent syphilis the treatment is favored by the fact that time is a great healer. The patient with late latent syphilis, even when untreated, stands a three-to-one chance of living his normal expectancy without the development of serious complications of the disease.

The repository forms of penicillin are in favor because of convenience and economy in permitting the patient to remain ambulatory. Procaine pen-

icillin G in aqueous suspension is the preparation of choice at present. The chief advantage of penicillin is the fact that more than 95 per cent of the patients receive an adequate amount of treatment. In the old days less than 30 per cent of the patients received the minimal requirements of adequate treatment which required a period of two years. When penicillin is used the danger of neurosyphilis is virtually abolished.

The older the disease, the higher is the percentage of serologic and clinical relapse, varying from 10 to 20 per cent of patients treated in the late secondary phase. This emphasizes the need for constant vigilance in the follow-up of such patients and the use of quantitative procedures for serologic testing at frequent intervals.

Ideal schedules of treatment within certain limits still are more or less arbitrary. In general, in the group of patients who have early syphilis, it is safe to give 600,000 units of penicillin (procaine penicillin G in aqueous suspension) by intramuscular injection for fifteen consecutive days. In the secondary stage and in the relapsing stages, when retreatment is needed, the total dose should be larger. The addition of arsphenamines or bismuth to such schedules does not contribute to the effectiveness of therapy.

Prophylactic treatment with penicillin of persons who have had contact with patients with infectious syphilis is highly successful. The incidence of syphilis developing in such contacts has been reduced from a range of 25 to 60 per cent in the untreated, to 4 per cent among those given treatment.

Complete control of the disease will be obtained only when all patients with syphilis are apprehended. It is estimated that 3,000,000 persons in this country have a positive reaction to serologic tests for syphilis. The disease still maims thousands each year and innocently infects many others.

Brunsting, Louis A.: The Present Status of the Problem of Syphilis, J. Michigan M. Soc. 50:48-53 (January) 1951.

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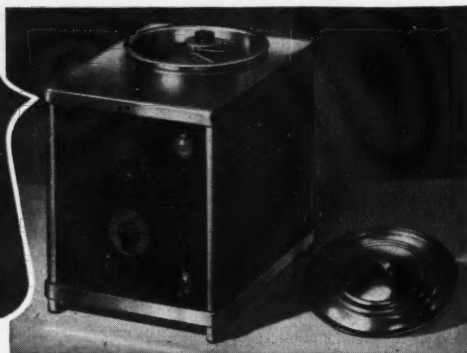
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Postpartum Plasma in Rheumatoid Arthritis

A sustained remission in rheumatoid arthritis can be obtained by the administration of pooled postpartum plasma. This treatment is being carried out in a few arthritis clinics in the United States.

Such a remission is characterized by: (1) an amelioration of joint symptoms, (2) an improved sense of wellbeing, (3) a brighter outlook, (4) increased appetite, (5) a gain in weight, (6) improvement of the anemia and (7) restoration of the albumin-globulin ratio to normal. There are no apparent toxic effects in these postpartum plasma transfusions.

Remissions as long as fourteen months have been obtained. The mechanism of this beneficial effect in the treatment of rheumatoid arthritis is not yet clearly understood.

Blood is obtained forty-eight to seventy-two hours after delivery and pooled so that each specimen represents the blood of at least ten mothers. In most specimens the total lipid and phospholipid levels are below normal. The fatty acids are within normal limits but are never elevated. The albumin levels are below normal.

In all specimens the cholesterol and cholesterol esters are well below normal level. Therefore, it is suggested that this decrease in cholesterol reflects the pituitary adrenocorticotrophic hormone activity in postpartum plasma.

Granirer, L. W.: *Study of Lipids in Postpartum Plasma: Its Use in Rheumatoid Arthritis*, Surg. Gynec. Obstet. 91:591-593 (November) 1950.



Poliomyelitis vs. Immunization

Analysis of the records of a series of poliomyelitis cases in a London Hospital suggests a relationship in the incidence of the disease to a previous course of immunization injections. About 15 per cent of the polio-

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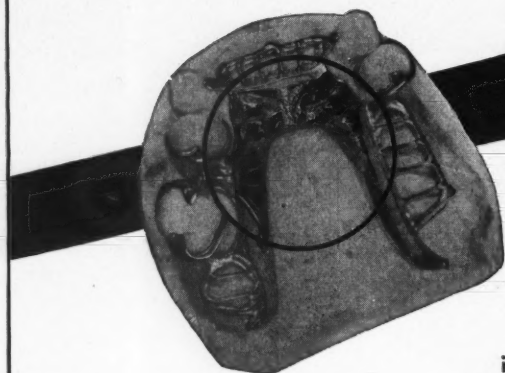
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myelitis victims show a strikingly uniform and similar pattern.

The course of injections had been received within the past two months. The paralysis followed combined pertussis and diphtheria injections.

Within two months of one of the injections in the course, the onset of poliomyelitis with paralysis of a frequently uniform pattern in the same limb was noted. In the upper limb it was the muscles of the shoulder girdle and the biceps and triceps

which were usually the first to be paralyzed. These were often the only muscles seriously paralyzed although weakness was not uncommon in the neighboring muscles of the trunk and forearm.

In the lower limb the pattern was similar. The muscles of the inoculated buttock and thigh were the earliest and most seriously affected.

The preponderance of upper limb paralysis in those immunized within two months suggests the influence of

the inoculation in determining the site of paralysis, since inoculations in London are much more frequently done in the arm than in the leg. These authors conclude that during periods of high or moderately high prevalence of poliomyelitis there is a definite but probably small risk that inoculation with the type of whooping cough and diphtheria prophylactic usually employed will be followed by serious flaccid paralysis of the inoculated limb in young children. The paralysis particularly affects the muscles adjoining the site of inoculation.

Banks, H. Stanley, and Beale, A. J.: Poliomyelitis and Immunization Against Whooping Cough and Diphtheria, Brit. M. J. 2:251-255 (July 29) 1950.



Obesity

It is recognized that the incidence of many of the degenerative diseases is increased by gross obesity. In the obese the following conditions are noted with greater frequency: (1) heart disease, (2) hypertension, (3) nephritis, (4) degenerative arthritis, (5) gallbladder disease, (6) arteriosclerosis, (7) diabetes mellitus, (8) varicose veins, and (9) venous thrombosis.

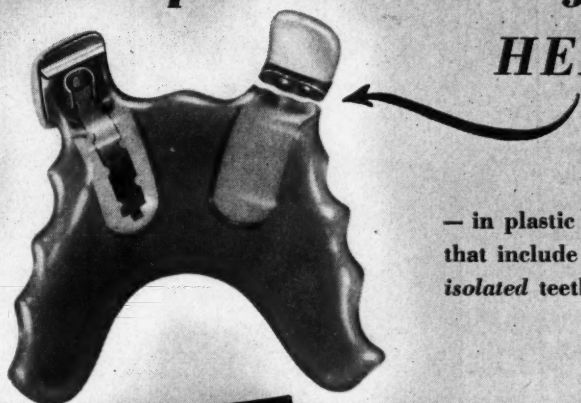
Diaphragmatic hernia seems to be commoner in persons of excessive weight. Fat patients are a poor surgical risk.

Obesity is due to overeating. Hypothyroidism and hypofunction of the pituitary are not as important in the etiology as has been thought.

Strict adherence to a low caloric diet is essential in the treatment of obesity. The patient should be told that the reduction will be more rapid during the first few weeks than it will be later as his weight approaches normal. He should be taught to expect periods of several days when he fails to lose weight because of water retention. These will be followed by

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periods of more rapid loss when the water is excreted.

Patients must be convinced that obesity is due to excessive intake of food and not primarily to glandular disturbances. It may be necessary to permit an occasional patient to take a small amount of thyroid extract for a few weeks to avoid offending him. However, he should be informed that this is being permitted to convince him that endocrine therapy is not necessary if the diet is followed. Amphetamine may be of value in reducing appetite, but if it is prescribed, the patient should be informed that this drug, as well as other drugs, is no substitute for determination to adhere strictly to the prescribed diet.

There are virtually no contraindications to reduction of obesity. Prevention of obesity would mean a decrease in the incidence of the degenerative diseases, and an increase in the longevity of the population.

Wright, D. O.: Obesity with Special Reference to Cardiovascular Disease, Alabama State M.A.J. 20:86-90 (September) 1950.

Contra- Angles



Too Much "Doctor"

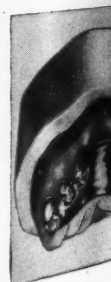
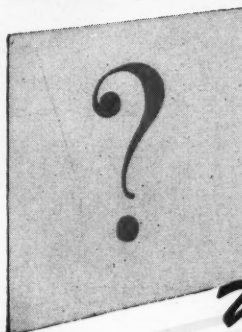
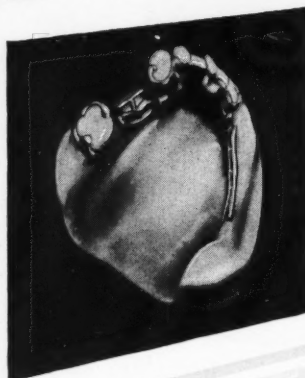
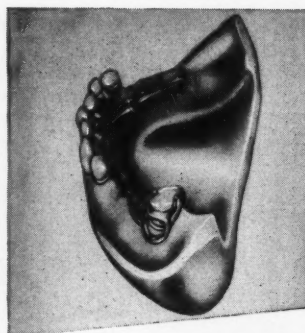
A few salesmen who appear before us in the flesh and some who write sales letters have been taught that business cannot be done with dentists unless "Doctor" is interlarded between every couple sentences. Some wives have acquired the same annoying mannerism and refer to their husbands as "The Doctor." I know one gracious hostess, the wife of a dentist, who never relaxes for a moment, in public at least, and has been heard to ask, "Doctor Blank, please pass the biscuits." She has begotten several

children by "The Doctor" which may prove that under appropriate conditions she may have dropped some of her formality. But biologically, that isn't necessarily so.

A few people who skirt around the periphery of informality speak of "Doctor Gus," "Doctor George," "Doctor Fred." Better to call him by his first or last name without adornment. If the situation is such that formality is necessary, call him in one word, Doctor "Lastname," and forget the coy formality. Occasion-

ally, when father and son or brother and brother practice together Doctor "Firstname" is a convenient identifying label and this usage has merit. In this case it is used for convenience and not for chumminess. The dentist who gets all fussed up because somebody forgets his tag and makes public protestations of displeasure is a sorry fellow and subject to ridicule.

I am glad to know that there are some physicians who are slightly amused at the obsequious "Doctoring" and who feel that civilization has



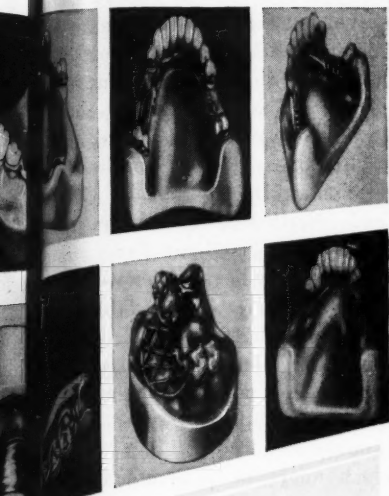
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not collapsed if someone refers to them as Mister. A writer in *Medical Economics* expresses it well under the title *Yes, Doctor; No, Doctor*:

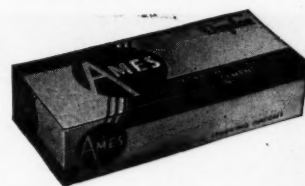
"The other evening I was talking to a woman who had been head librarian at a nationally known clinic. I asked her how she had happened to give up her job. Her reason was the constant, 'Yes, Doctor; no, Doctor' she had heard on every hand. It was more than she could stomach.

"I couldn't help agreeing. For the incessant use of the title 'Doctor' is

at once pointless, tiresome, and in poor taste.

"Why on earth do we insist on it, anyway? Look at the kettle of fish it puts us with. When someone calls us 'Doctor,' we may be any one of a dozen things, from a Ph.D. to a sanitarior. In my town it even designates a retired blacksmith, whose 'degree' stems from an inspiration to heal, and nothing else.

"Since the title has been so diluted, then, why not leave it in the hands of its adulterators and come



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clean ourselves? No person of real substance needs a title to lean on. Did the word 'Doctor' ever do anything for Osler, or Einstein? Is it any guarantee of superior intelligence? (What a laugh that would be to the girl who untangled my checkbook for me last week!) It can scarcely be a symbol of prestige, exacted as it is from the public in so wholesale a manner. And of what value is prestige, anyway, except that it comes from individual integrity and accomplishment?

"This is not a new idea, of course. The British have gone quite a way with it; and others here have thought about it too.

"I'm told that the chancellor of one of our leading universities has asked that the title 'Doctor' no longer be used by members of his faculty—the reason being that on any good university faculty a degree is something to be taken for granted, not something to be sounded off at the drop of an ego.

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Friends and Hobbies

Ordinarily we use no poetry in this journal but this is once to make an exception. After writing about the curse of hobbies in this column in July several letters came in and a few telephone calls were received. One of the letters received enclosed a poem from Doctor Earl H. Crary, Cando, North Dakota, and here it is:

Don't Spoil our Fun

I've finished a heavy day's work,
Placed a big cigar in my face,
And now I'm asking you, E. J. R.,
Would you call it a rank disgrace
To sit in front of this typing machine
And turn out a breezy verse?
I know a lot of other things
Which might be a thousand times
worse.

You have taken a crack at our hobbies,

And are trying to spoil our fun;
But what could fit in better,
When the tasks of the day are done,
Than changing the subject entirely
To rest a weary, worn mind
And rekindle our zest for tomorrow,
Better fit to tackle the grind.

Clarence Darrow didn't like music,
But he wanted pianos to stay;
He asked each man to decide for himself,

If he felt the urge to play.
So ponder it over, E. J. R.,
As in your hammock you swing.
You may not like vocalizing,
But don't ask me not to sing!

Another correspondent, Bernard Hetrick of Butler, Pennsylvania complains that he used to hunt but since somebody remodelled the mountains and made them steeper he has given up that sport and turned to dahlia raising:

"I raise dahlias! I have them from twelve different countries. You can 'horse trade' for roots up to \$50 in value and dig and delve in mother earth. Come over some time! I got 'em up to 15 inches in diameter and have extra hoes and spades. They are fine to take off what bumps into the base of your x-ray tube when you are x-raying a lower right third molar."

Prosthetics Perpetual

Every dentist who has practiced ten or more years can think without effort of a half dozen patients who present themselves from time to time for free adjustment of an aged prosthetic appliance. By "aged" we arbitrarily mean one that has been in service a year or more. A good many that we see are dusky with many years of wear. Seldom do these people who are seeking free adjustments make an appointment. They just drop in, usually with the sure remark, "I'll only take a minute of your time." Then they proceed to tell us everything that happened in their life and the life of their family since they saw us years before. Frequently these dropper inners remark, invariably in the hearing of waiting patients, that "The plate you made me is loose." "My bridge pulls out when I eat." "My gums are sore as a boil," or if they are strongly masculine, "My gums are sore as hell." Don't expect them to say when the appliance was made. Let the waiting patient think this was some recent treatment that they received from you. These dropper inners and reception room chatters do not build confidence for a dental practice.

All of us practicing dentistry are in debt to the public relations committee of the St. Louis Dental Society for the expression "perpetual postoperative care," and to Ralph Rosen, editor of the *Bulletin* of the St. Louis Dental Society for the effectively expressed editorial on the same subject, *Perpetual Care in Dentures*:

"If the exodontist might be considered the dental mortician, then the prosthetist might well be called a monument maker. And the porcelain and plastic markers erected to the memory of departed teeth, in all too many instances, according to a report of our public relations committees, have been installed with an implied 'perpetual care' clause. All of which leaves us quite incinerated, or shall we perpetuate the figures of speech and say cremated?"

"Certainly, from any point of view, is there any reason why we should be eternal pall bearers for the dental re-

placements and provide perpetual care? Restorations properly designed, installed, and paid for constitute a completed transaction. To be sure, in some cases in the event of premature breakage or possibly faulty workmanship, we have an implied obligation. But 'perpetual care' necessitated by tissue resorption or carelessness on the part of the patient is in no sense our responsibility.

"Would it not be well to bear in mind that while the replacement of prosthetic appliances for us is a daily

occurrence, for the patient, particularly dentures, it is a first time in his life. Nor is it enough that the case is carefully diagnosed, properly constructed, and comfortably fitted. Besides these mechanical preparations, we must not overlook the mental preparations as well. We should fit the appliance to their mind as well as their mouth.

"Nothing should be taken for granted. The patient must realize his responsibility. Much grief may be avoided by carefully preparing the

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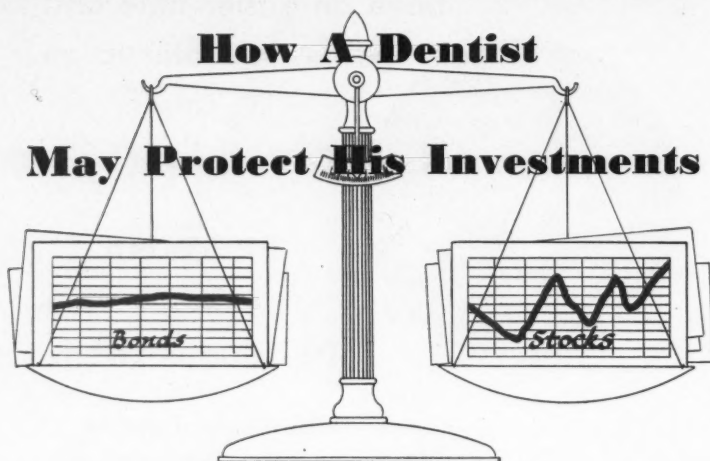
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In your ORAL HYGIENE this month

How A Dentist May Protect His Investments



"In the last decade the purchasing power of the American dollar has declined 47 per cent; in the last fifty years, 67 per cent; and in the last century, 77 per cent."

We're quoting Jacob O. Kamm, Ph.D., an economist whose interest in dentists' investments has led him to make a study of their particular financial problems. His article, "How a Dentist May Protect His Investments," sums up his findings. His recommendation: balanced defensive-aggressive holdings as a bulwark against inflation or deflation. You will want to read the entire article.

★ ★ ★

"Retirement Income At A Price!" is another article for the dentist who is trying to build up a backlog of savings. W. Clifford Klenk's careful analysis of certain types of insurance should be a valuable guide in determining what sort of policy to consider.

★ ★ ★

Oral Hygiene seems to be particularly money-conscious this month for even the title of an article on patient relations is couched in financial terms, "Words Cost Nothing." Doctor Harry C. Peake explains how the dentist can use honest praise to increase good will. If you think there's *nothing* to praise about some of your patients, read this article.

★ ★ ★

"When Your Practice Plays Second Fiddle" it's time to do a little serious thinking. Many a dentist has joined organizations in order to meet people and take part in worthy group activities, only to find that such ac-

tivities are crowding into his productive time to an alarming degree. There's a lot of valuable advice in this sensible article.

★ ★ ★

"Wanted: Heroes" is the intriguing title of an article by Maurice J. Teitelbaum. This discerning dentist argues that a great deal of good will and respect has been built up for the medical profession through such books as "Arrowsmith," "The Citadel," "Men in White," "Doctor Kildare," and other tales of physicians' lives and adventures, and that similar books might give the dental profession welcome prestige. He suggests that a dental sleuth would be a natural addition to the long list of "whodunit" characters, so—if you're thinking of writing a mystery story, try yourself in the role of "hero."

★ ★ ★

"Mental First Aid in Dental Practice" was written by Doctor Leonard E. Himler, a psychiatrist. He explains the many ways in which the dentist can adapt the principles of psychotherapy to his patients' needs. You won't need a couch—just a little patience and as much human understanding as you can accumulate.

★ ★ ★

Here's a dentist with a hobby that has grown into a business! When Doctor F. J. McDonald first became interested in raising trees and shrubbery, he had no idea that his hobby would furnish a business for his son—but McDonalds' Nursery is doing a thriving business and both McDonalds are happy in its success.

patient for the ordeal of adjusting himself to the prosthetic appliance. At best, they are a compromise with nature's dentition. However, we need not compromise ourselves for their perpetual care. Let us not dig our professional or economic graves with our patients' teeth. Better that their teeth should be our pride, but the patient's responsibility."

Every year when the decorator shows himself at office cleaning time I am inclined to tell him that the walls have smudged up in the last year and that he should do them over without charge. That is what people tell us when their dentures are discolored after a year's wear. And how about your automobile? The seller tells you when you buy that anything that goes wrong, after a definite and specific warranty period, is adjusted, repaired, replaced at *your* expense. So it goes with everything else except the perpetual care cemetery lot where the family has paid heavily in advance for the service. There is no perpetual care for your radio-television set, your plumbing fixtures, the roof over your head, for your body—except your replaced teeth.

The St. Louis Dental Society recommends: "1. That a specific fee be quoted for the denture itself, and an additional fee be quoted for all post-operative treatment and rebasing or remaking. 2. That this quotation be made in writing to avoid misunderstanding later. 3. That, at the start, the patient be informed that resorption of the tissues is not the practitioner's responsibility, whether recurring one week or one year after insertion of the dentures. 4. That practitioners exercise even greater precautions in making statements that could be construed a criticism of a fellow-practitioner."

Dentists *hope* that they will not have a protracted series of prosthetic adjustments. They *hope* that once a person accustoms himself to an appliance he will not return. Actually with this attitude we are doing a disservice to people not to have them return for examination (for a fee) or for necessary adjustments or for

needed new appliances for which they are expected to pay. We frequently know that a denture should be rebased or remade but we are too timid to express our opinion to the patient and that is presumably what they are in our offices to receive—our professional counsel. Because we are so timid to tell people the facts of prosthetics we are giving them false ideas and often perpetuating harmful physical conditions. Let's say it outright: we are being unethical.—E. J. R.

Fluorescence of the Tongue

WHEN THE mouth is irradiated with filtered ultraviolet light, excluding the visible rays, the dorsum of the tongue and sometimes the teeth often display a reddish-orange fluorescence. Investigations of the nature of the substance causing the phenomenon have revealed that the coating from the surface of the tongue and the dental deposit both give a "beautiful red fluorescence" in filtered ultraviolet light. The luminescent compound has been identified chemically as the natural pyrrole pigment, porphyrin, contained in the coating and dental deposit. However, the coating of the tongue responsible for fluorescence can be only partly removed. After the surface of the tongue has been scraped rather vigorously, it will be observed to remain fluorescent in ultraviolet light.

Fluorescence Absent if Vitamin Deficiency Exists

It is reported that the fluorescent lingual coating disappears in vitamin-B deficiency. According to some authorities the fluorescence is (1) abundant in children, (2) less so in well-nourished adults, and (3) absent in those with vitamin deficiency.

In an examination of over 500 patients in a dermatologic clinic about three out of five patients showed fluorescence which covered the whole tongue or approximately half of the dorsum, (2) about every fourth patient displayed fluorescence over the whole surface, (3) patients whose

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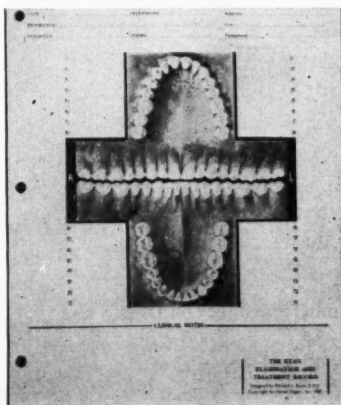
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CLINICAL AND LABORATORY SUGGESTIONS

(See pages 458 and 459)

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Explanation of Procedure:

Sketch:

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tongues showed greatly diminished or absent fluorescence often had skin lesions usually associated with vitamin-B deficiency, (4) when vitamin-B preparations were given, especially those containing pantothenic acid, normal fluorescence was usually restored.

Specially Selected Cases Studied

Over 400 patients, specially selected for diseases characterized by changes in the tongue (pernicious and hypochromic anemias, sprue syndrome, and vitamin-B deficiencies) were studied. Two hundred healthy persons were used for control purposes. The following facts were revealed by the study:

Incidence in Healthy Persons—(1) The majority of healthy persons showed fluorescence on the posterior half or three-quarters of the tongue's surface, (2) about one out of five exhibited fluorescence on the whole tongue, (3) only 18 per cent showed no fluorescence, and (4) the intensity of the phenomenon varied considerably in people and sex seemed to exert no influence.

Absence Increases with Age—Fluorescence was found in only 11 per cent of children but in 53 per cent of people over 80. In general, the intensity of the phenomenon in old people was definitely less than in children and younger adults.

Incidence in Anemia and Deficiency Diseases—(1) In pernicious anemia, hypochromic iron-deficiency anemia, sprue syndrome, and vitamin-B deficiencies a higher incidence of absent fluorescence was observed, (2) it was negative in 64 per cent of the patients with pernicious anemia, (3) in 60 per cent with iron deficiency anemia, and (4) in 73 per cent with sprue syndrome. In a group of seven cases with signs of vitamin-B deficiency, particularly of ariboflavinosis, fluorescence was absent.

Reappearance of Fluorescence—1. In some patients with pernicious anemia fluorescence reappeared after treatment with vitamin B₁₂. 2. In cases of sprue syndrome treated with folic acid, riboflavin, and nicotinic acid. 3. Five patients with signs sug-



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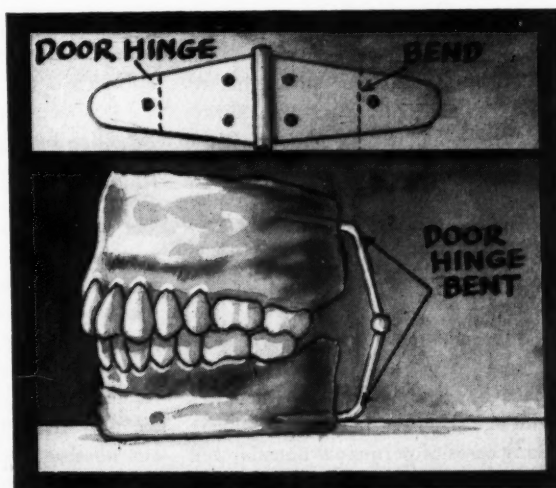
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gestive of vitamin-B deficiencies and without fluorescence.

Medication Produces Intensity—In healthy persons with faint fluorescence treatment with pantothenic acid, 50 milligrams three times daily for two weeks, produced a marked increase in the intensity.

Fluorescence Destroyed by Antibiotics

1. Five persons with positive fluorescence received penicillin in 500-unit lozenges, 8 to 10 a day. After a few days the fluorescence disappeared completely in each case, starting from the front and moving toward the back of the tongue.

2. With cessation of penicillin treatment fluorescence reappeared gradually in a few days, starting from the back of the tongue. Similar results of vanishing fluorescence were observed after oral treatment with streptomycin, chloramphenicol, and aureomycin.

3. In contrast to the antibiotics, use of sulfathiazole lozenges, six a day, seemed to have no effect on the phenomenon.

Summary

1. The clinical significance of the fluorescence of the tongue is not yet fully known.

2. One factor necessary for the phenomenon is the presence of normal papillae, since a smooth tongue as a rule does not exhibit fluorescence.

3. That vitamin B₁₂, folic acid, and vitamin-B complex seem to influence the restoration of fluorescence in certain conditions is doubtless due to their action in regenerating the papillae. There is, however, no proof that reduced or absent fluorescence is always due to deficiency of the vitamin-B complex.

4. Whether the fluorescence phenomenon may serve practically as a clinical guide to the state of nutrition in the subject depends on further research.

5. It is not known why the percentage of negative cases of fluorescence in healthy persons increases with age. There is no explanation why many cases of pernicious anemia, well controlled with liver and vitamin-B

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complex, and showing an apparently normal tongue, still fail to exhibit fluorescence.

6. When some of these questions are answered the family physician

may revive the old custom of scrutinizing the tongue, in a new light—ultraviolet.

Adapted from *What's New*, Number 158:6-28 (June) 1951.

Recurrent Herpes Simplex

HARVEY BLANK, M.D., and MORRIS W. BRODY, M.D.

The present study was suggested by two particular observations: 1. The favorable response of some patients with frequent recurrent herpes simplex to various nonspecific measures indicated the possibility that this was in reality "suggestive therapy" on the part of the physician. 2. Numerous observers have recorded that in certain patients, attacks of herpes

simplex have followed specific emotional upsets.

Method of Study

The ten patients studied had experienced frequent recurrent herpes simplex and most of them had been under extensive previous medical care for this disease. Diagnosis was established and studies such as (1) sola-

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tion of the virus from vesicle fluid, and (2) a determination of the titer of specific neutralizing antibodies in the patient's sera were performed.

The dermatologic history was taken and follow-up observations of the skin lesions were made in the laboratory during the psychiatric study.

Patients were seen weekly, the interviews being approximately of one hour's duration. The number of interviews for each patient varied from two to more than fifty.

Results of Psychiatric Interviews

With one exception, every patient said that he was pleased with the opportunity to see a psychiatrist. These patients were anxious for help and

eager to cooperate. They did not think it unusual that herpes simplex should be treated by a psychiatrist but volunteered the information that they had observed a positive relationship between emotional upset and the occurrence of herpes.

Need for Approval—All of the female patients spoke at length of their need for approval. They resembled the saccharine type of person who gives the impression of never saying an "off-color" remark. Their expressions were sweet, almost baby faced.

Transference Rapid—The nine patients made a rapid positive transference to the therapist. Like good children they were eager to please and gain love from the therapist. Fearing loss of love, or their own reaction to

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loss of love, they were eager to respond with obedience in order to pacify their instinctual craving.

Effect of Transference—When transference develops there is a change in the dynamic relation between the repressed impulses and repressing forces, with resulting changes in guilt and anxiety. The patients felt the therapist to be a reassuring force and for the sake of his love and protection quickly yielded some of their symptoms.

Vegetative Response—The positive temporal relationship between psychiatric treatment and almost immediate relief of herpes, even with patients having almost continuous crops of herpes, seemed sufficiently specific to discount the spontaneous relief that is sometimes seen without treatment. The psychiatric examiner concluded that herpes simplex, activated by hysterical conflicts, is a vegetative response that disappears readily with establishment of a positive transference.

Adapted from *Psychosomatic Medicine* 12:254-256 (July-August) 1950.

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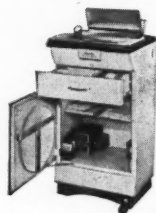
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